



## **GALWAY COUNTY COUNCIL**

CLIFDEN TOWN PUBLIC REALM ENHANCEMENT PROJECT INCLUDING CLIFDEN HARBOUR PARK AND BEACH ROAD QUAY CLIFDEN

**STAGE 1 ROAD SAFETY AUDIT** 



# Clifden Town Public Realm Enhancement Project Including Clifden Harbour Park and Beach Road Quay Clifden

## **STAGE 1 ROAD SAFETY AUDIT**

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## 1.0 INTRODUCTION

This report describes the Stage 1 Road Safety Audit carried out for proposed active travel upgrade works in Clifden Town.

This report covers the following schemes:

- Clifden Town Public Realm Enhancement
- Harbour Park
- Beach Road

The scheme locations are shown in Figure 1-1.

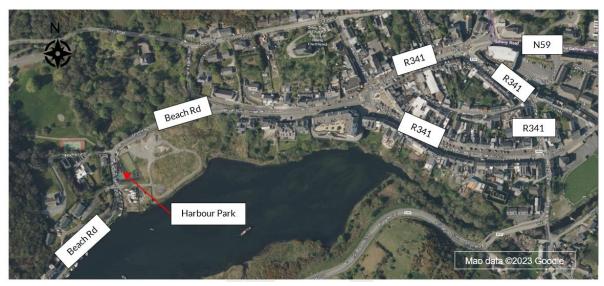


Figure 1-1 Scheme Location Map

## 1.1 EXISTING ENVIRONMENT

#### 1.1.1 Clifden Town Public Realm Enhancement

Clifden Town is situated adjacent to the N59, National Road but does not include works on the National Road. The proposed site for audit includes urban and suburban areas within Clifden Town Centre

The main street runs through the heart of the village. The schemes are located within the urban 50kph speed limit, commencing at N59 Clifden Business Park and continuing towards Clifden village.

The main street is a single carriageway road with pedestrian facilities currently provided on both sides of the road. There are no cycle facilities present. Ribbon development is along both sides of the road.

#### 1.1.2 Harbour Park

Harbour Park is an area of vacant land at the water edge sited beside the town's playground and basketball court.



#### 1.1.3 Beach Road

The pier is located on the Beach Road on the northern side of Clifden Bay. Clifden bay is located to the west of Clifden town centre.

There is a grass verge approximately 3m wide between the top of the pier and the Beach Road over most of the length of the wall with the exception of one area where there is a concrete pavement adjacent to the wall.

The pier seems to be used mainly by small leisure craft and fishing vessel used by fishermen.

#### 1.2 PROPOSED SCHEME

Galway County Council propose to upgrade sections of the urban Clifden Town area, Harbour Park and Beach Road Quay with public realm, pedestrian and cycleway upgrades.

A summary of the proposed works for Clifden Town Centre are as follows:

- Junction Upgrades
- Urban Realm Upgrades
- Car Park Upgrades
- Streetscape amendments

A summary of the proposed works for Harbour Park are as follows:

- Car Park Upgrades
- Boundary Treatment

A summary of the proposed works for Beach Road Quay are as follows:

- Car Park Upgrades
- Integration of signage and enhanced connectivity

## 1.3 COLLISION DATA

#### 1.3.1 Road Safety Authority Database

Collision data has not been supplied with this scheme.

Road Collision Data is not currently available on the Road Safety Authority Database, and therefore the audit team has no access to the historical collision information for this site and / or adjacent roads.

## 1.4 AUDIT DETAILS

The audit took place in TOBIN Offices in September 2023. The audit comprised an examination of the documents provided by the Design Team and listed in Appendix A. A site visit was undertaken by the RSA Team on the  $12^{th}$  of September 2023, between the hours of 9:30-12:00pm. During the site visit the weather was dry with some sunny spells and the road surface was dry.

The Audit Team note that no information was provided on the following:

 Vertical / Longitudinal profiles of the carriageway are existing and have not been assessed as part of this RSA. The active travel infrastructure has been assessed taking cognisance of the constraint onsite.



Detail design elements – (Ancillary highway drawings including, amendments to existing
utilities and public lighting, geometry, drainage, pedestrian and vehicular restraints,
vehicular wept paths, site clearance, boundary treatments, earthworks and excavations,
pavement details & specific kerbing details, accommodation works and as such the Audit
team have not considered these elements in the Stage 1 Road Safety Audit Report.

The audit team members were as follows:

#### Audit Team Leader/Member

- Ronan Murtagh B.A. B.A.I, CEng, MIEI. Senior Engineer for Roads & Transportation, TOBIN Consulting Engineers. – TII Reference RM3414512
- Maria Rooney B.Eng., M.Eng., C.Eng., MIEI Senior Engineer for Roads & Transportation, TOBIN Consulting Engineers. – TII Reference MR3384505

#### Audit Team Observers:

 Jessica Lima –BEng (Hons) Civil Eng., MIEI. Design Engineer for Roads & Transportation, TOBIN Consulting Engineers

This Stage 1 Audit has been carried out in accordance with the relevant sections of Transport Infrastructure Ireland Publication (Standards) "Road Safety Audit" GE-STY-01024 (December 2017). The team have examined and reported only on the road safety implications of the design submitted and has not examined or verified the compliance of the design to any other criteria. However, to clearly explain a problem or a recommendation, it may be necessary to refer to another Standard or Advice Note, but such reference will not conflict with the requirements of the above Terms of Reference.

The Design Team and Employer (Client) is reminded that the Road Safety Audit Feedback Form, in Appendix C, shall be completed and returned to the Road Safety Audit Team Leader for sign off.



## 2.0 ITEMS RESULTING FROM THIS ROAD SAFETY AUDIT

## 2.1 GENERAL ITEMS CLIFDEN TOWN CENTRE

#### 2.1.1 PROBLEM

#### **General Item - Tactile Paving**

The Audit Team observed on site a number of tactile paving was absent at numerous proposed crossings. The Audit Team are concerned this may result in visually impaired personal will enter the roadway. This may result in a collision between a vulnerable road user (VRU) and a vehicle.

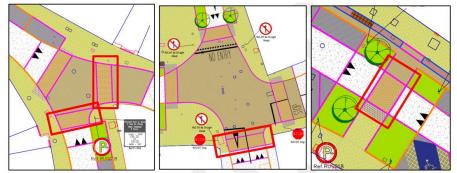


Figure 2-1 Examples of Discrepancy of Tactile Paving Provisions (Dwg No. 11623\_LD\_HL\_TC\_003)

#### Recommendation

The designer should provide tactile paving at all crossing points throughout the scheme.

#### 2.1.2 PROBLEM

#### General Item - Road Marking

The Audit Team observed on the design that the proposed road markings are not in accordance with chapter 7 of the Traffic Signs Manual (TSM). The Audit Team are concerned that the Inaccurate Road marking selection and location could result in a false expectation of the upcoming traffic. This may result in collisions between vehicles or increased risk of collisions with VRU.

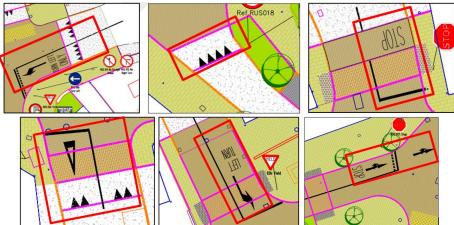


Figure 2-2 Examples of Discrepancy Road Markings (Dwg No. 11623\_LD\_HL\_TC\_002)

#### Recommendation

The Design Team should provide consistent delineation to Chapter 7 of the TSM across the scheme.



#### 2.1.3 PROBLEM

#### General Item - Signage

The Audit Team observed on the design that the proposed signage design is not in accordance with the Traffic Signs Manual (TSM). The Audit Team are concerned that Inaccurate signage selection and location of signs could result in a false expectation of the upcoming road operation and layout. This may result in collisions between vehicles or increased risk of collisions with VRU in the proximity of the crossing location.

#### Recommendation

The Design Team should provide consistent delineation & signage in accordance with TSM across the scheme.

## 2.1.4 PROBLEM

#### General Item – Existing Utility

The Audit Team observed on site a number of clashes with existing utilities, poles interfacing kerb lines and obstructing footways. The Audit Team are concerned this may result in trip and point of hazards for VRU. This may result in an obstruction for VRU and vehicles.

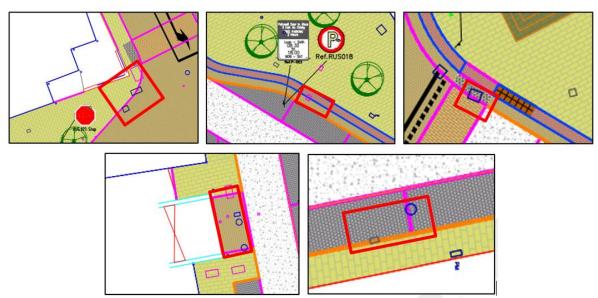


Figure 2-3 Examples of Clashes with Existing Utility Chambers and Proposed design (Dwg No. 11623\_LD\_HL\_TC\_003)

#### Recommendation

The designer should divert the existing utilities to remove obstructions for pedestrians and drivers or modify the design to avoid utility clashes.



#### 2.1.5 PROBLEM

## General Item - Footway / Cycle Track / Carriageway Widths

The Audit team observed on site that carriageway, footway and cycleway widths weren't shown on the drawings. The Audit Team is concerned that inadequate width facilities may result in opposing user collisions or entry into adjacent facility. This may result in a collision between a VRU and a vehicle.

#### Recommendation

The design team should ensure that all facilities are of suitable width and in compliance with the relevant design manuals.

## 2.1.6 PROBLEM

## **General Item - Displaced Local Traders**

The Audit team observed on site a number of local traders are operating within parallel parking areas and offline parking areas on Market Street. The Audit team are concerned the failure to cater for the existing traders may result in the setting up of the stalls in unsuitable locations. This may result in creating hazardous situations for VRU.



Figure 2-4 Examples of Existing Local Traders in Market Street.

#### Recommendation

The designer should accommodate existing trader areas within the scheme.

#### 2.1.7 Problem

#### General Item -Lack of Information at Tie in Locations

The Audit team observed on site that a proposed full upstand is shown on the drawings but on the drawings no information on tie in location has been provided. The Audit Team is concerned that an incomplete tie in design may result in drivers' confusion or entry into adjacent facility. This may result in a collision between a VRU and a vehicle.



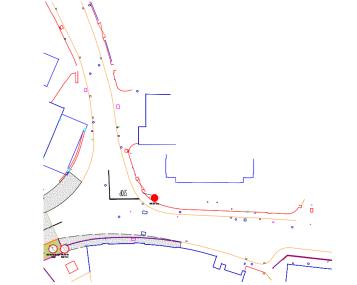


Figure 2-5 Example of Lack of Tie in Location provided (Dwg No. 11623\_LD\_HL\_TC\_002)

#### Recommendation

The design team should ensure that design indicate tie in location.

### 2.1.8 PROBLEM

## Main Street/ Bridge Street/ Market Street Priority Operation

The Audit Team observed the preliminary design that no details of the operation of the junction have been provided to the Audit Team. The Audit Team are concerned that the lack of clarity on priority of road users could result in driver confusion and turning collisions. This may result in a collision between a VRU and a vehicle.

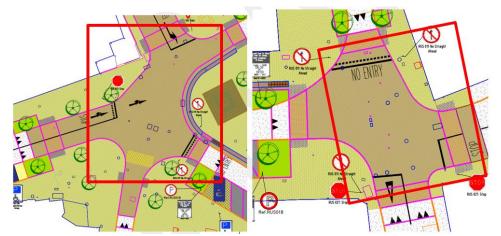


Figure 2-6 Example of no details of priority at junctions have been provided (Dwg No. 11623\_LD\_HL\_TC\_001 & 002)

## Recommendation

The designer should show the priority at junctions within the urban area, with clearly defined road marking and signage.



## 2.1.9 PROBLEM

## **Pedestrian Priority**

The Audit Team observed the preliminary design that no details of the footway continuity have been provided to the Audit Team. The Audit Team are concerned that the lack of clarity on priority of footway could result in VRU and driver confusion This may result in a collision between a VRU and a vehicle.



Figure 2-7 Example of no details of priority at footway have been provided (Dwg No. 11623\_LD\_HL\_TC\_002)

#### Recommendation

The designer should show the continuity at footway within the urban area, with clearly defined road marking and signage.

## 2.1.10 PROBLEM

## **Obstructions Within Proposed Footway Areas**

The Audit Team observed on site numerous areas where clashes occurred with existing urban realm infrastructure. The Audit Team are concerned this may result in obstruction for VRU. This may result in an obstruction for pedestrians leading to potential collisions and conflicts occurring.



Figure 2-8: Existing Obstructed Regulatory Sign

#### Recommendation

The designer should remove the existing urban realm infrastructure obstructions.



## **2.1.11 PROBLEM**

## **Cycle Lane Termination**

The Audit team noted that no transition detail has been provided at the termination of this cycle lane as part of the preliminary design. The Audit Team are concerned that this may give rise to a conflict point between pedestrians and cyclists. This may result in an obstruction for VRU and cyclists.

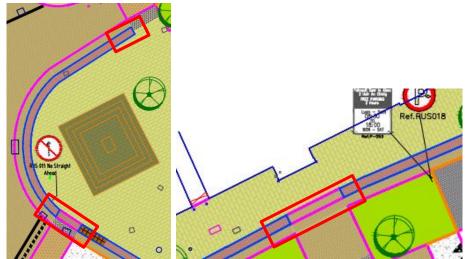


Figure 2-9: No Proposed Cycle Lane termination measure (Dwg No. 11623\_LD\_HL\_TC\_001)

#### Recommendation

The design team should ensure the cycle lane is terminated appropriately at the end point.

#### **2.1.12 PROBLEM**

## **Provision Of Paving at Steps Location**

The Audit Team observed the preliminary design proposed paving works and does not include a treatment to provide warning to visually impaired road users. The Audit Team are concerned that this may result in a trip hazard for VRUS. This may result in collisions with visually impaired users and VRUs.

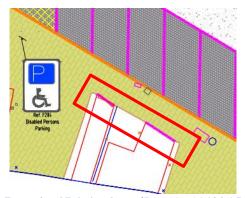


Figure 2-10: Example of Existing Steps (Dwg No. 11623\_LD\_HL\_TC\_001)

#### Recommendation

The design team should provide suitable gradients for pedestrians & VRUs across the scheme and ensure protective measures to prevent wheelchair rolling into the carriageway.



## **2.1.13 PROBLEM**

## **Lack Of Crossing Provision**

The Audit Team observed on site that the removal of the existing controlled crossing has been proposed at a desired pedestrian line. The Audit Team are concerned that the lack of crossing could result in mobility impaired users using the carriageway to move up the road. This may result in a collision between a VRU and a vehicle.

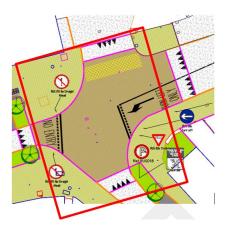


Figure 2-11: Example Lack of crossing provision (Dwg No. 11623\_LD\_HL\_TC\_002)

#### Recommendation

The design teams should incorporate suitable facilities for mobility impaired road users throughout the scheme.

## 2.1.14 PROBLEM

#### Kerb Type

The Audit team observed on site that kerb type specified is not consistent to the existing kerb and the existing railing has not been included in the design. The Audit Team are concerned this may result in visually impaired person will enter the roadway. This may result in a collision between VRU and a vehicle.



Figure 2-12: Existing Kerbing & Railing (Dwg No. 11493-08-6006-02)

### Recommendation

The design team should revise the proposed kerb type and including existing railing.



## **2.1.15 PROBLEM**

#### Kerb Type Inconsistency

The Audit Team observed on site that parking facilities have not been provided for this location. The Audit Team are concerned the lack of paring can enforce drives to park on the footway. This may result in an obstruction to the footway.

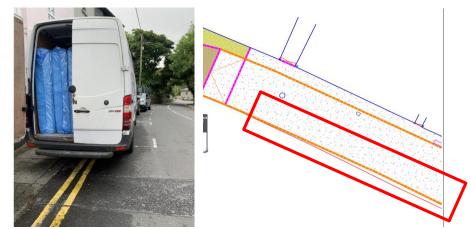


Figure 2-13: Existing Upstand Kerb and Parking (Dwg No. 11623\_LD\_HL\_TC\_003)

#### Recommendation

The Design team should account for existing kerb type and parking facilities.

## **2.1.16 PROBLEM**

## **Proposed Road Sign Setback**

No details were provided of the height and setback of the road signs from the kerb line. The audit team are concerned the road signs height and setback too close to the kerb line and the visibility of proposed signs. This will result in damage to the vehicle, the sign and potentially result in the sign being removed.

#### Recommendation

The design team should set back all road signs from the kerb line in accordance with the Traffic Signs Manual (TSM).



## **2.1.17 PROBLEM**

#### **Existing Loading Bay**

The Audit team observed on site that the existing loading bay has not been incorporated into design. The audit team are concerned this may lead to parking two abreast when loading is required. This may lead to driver frustration, unsafe overtaking and head-on collisions.





Figure 2-14 Loading Bay

## Recommendation

The design team should incorporate the existing loading bay into the design or provide alternative loading area.

## **2.1.18 PROBLEM**

## Pedestrian / Cyclists Visibility

The Audit team observed on the design that the proposed trees is shown on both side of the footway and cycleway. The Audit are concerned that cyclists or pedestrians may proceed into the path of oncoming traffic. This may result in a collision between VRU and a vehicle.



Figure 2-15 Pedestrian and Cyclists Visibility (Dwg No. 11623\_LD\_HL\_TC\_003)

## Recommendation

The design team should check the visibility approaching the ramp.



## **2.1.19 PROBLEM**

## **Road Marking**

The audit team noted 'No Entry' road markings is proposed with the wrong orientation. The audit team are concerned this may lead to drivers' confusion. This may result in collisions between vehicles or increased risk of collisions with VRU.

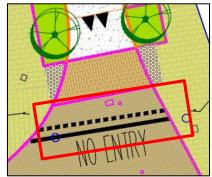


Figure 2-16 No Entry Road marking (Dwg No. 11623\_LD\_HL\_TC\_003)

#### Recommendation

The design team should ensure road markings are in compliance with the TSM.

#### **2.1.20 PROBLEM**

## **Road Marking**

The Audit team observed that at the Junction coming from Bridge Street, a left turn road markings has not been proposed. The audit team are concerned this may lead to drivers' confusion and late turning movement without warning. This may result in a collision between VRU and a vehicle.



Figure 2-17 Left turn road marking not included on the design (Dwg No. 11623\_LD\_HL\_TC\_001)

#### Recommendation

The design team should ensure road markings are in compliance with the TSM.



#### **2.1.21 PROBLEM**

#### **Gradient Of Angled Car Parking Bays**

The Audit team observed angled car parking bays are proposed in the area of Market Street and Main Street. The existing spaces are angled such that easy entry by driving forward can be achieved with a wide carriageway to reverse out from. The Audit Team are concerned that the driver reversing into spaces with excessive gradients could result in a loss of control and lead to collisions with VRUs.

#### Recommendation

The design team should ensure suitable gradients of the angled parking bays at detailed design

#### **2.1.22 PROBLEM**

#### **Road Marking at Crossing**

The Audit team observed that double yellow lines are not proposed on approach to all crossings. The Audit are concerned that vehicles parked on approach to the crossing may restrict visibility to pedestrians who are commencing their crossing. This may result in a collision between VRU and a vehicle.

#### Recommendation

The design team should ensure double yellow lines on approach to all junctions.

## **2.1.23 PROBLEM**

## **Bus Bay Road Marking and Tapper**

The Audit team observed on site that no detail on road marking and taper lengths have been provided for the bus bay. The Audit are concerned that the bus will restrict visibility to/from pedestrians who are using the adjacent crossings. This may result in a collision between VRU and a vehicle.

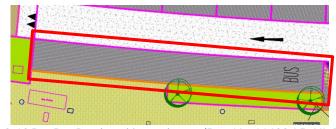


Figure 2-18 Bus Bay Road marking and taper (Dwg No. 11623\_LD\_HL\_TC\_001)

## Recommendation

The design team should provide bus bay markings in accordance with the Traffic Signs Manual (TSM).



## **2.1.24 PROBLEM**

## **Existing Bollards**

The Audit team observed on site that during the site visit that no details has been provided on the existing bollards in front of Circle K at Main Street.



Figure 2-19 Existing Bollards

## Recommendation

The audit team should reinstate the existing bollards.



## 3.0 OBSERVATIONS

The following observations were noted by the Road Safety Audit team on site and have been included below to raise some potential design considerations on this scheme.

## 3.1 OBSERVATION 1

The following elements have not been provided to the audit team for the Stage 1 Road Safety Audit.

- geometry,
- drainage
- utilities
- public lighting and accommodation work.
- A significant lack of consistency was also noted in the design elements provided including paving, tactile at crossings, kerbs, footways and paved areas.

The audit team note that the significant lack of detail provided for this Stage 1 RSA may give rise to follow on safety problems for the Stage 2 RSA which the design team should be conscious of prior to commencing detailed design.

## 3.2 OBSERVATION 2

#### **Stop Line Road Marking**

The Audit team observed during the site visit that the visibility of the stop line road marking overshoots the stop line. The Audit are concerned that vehicles at the stop line won't see the upcoming traffic from Main Street. This may result in a collision between vehicles.



Figure 3-1 Stop Line Road Marking

#### Recommendation

The Design team should check the visibility of the junction.

## 3.3 OBSERVATION 2

#### **Existing Drainage**

The Audit team observed during the site visit that the Aco drain has not been included in the proposed design. This can lead to future drainage issue.

#### Recommendation



The design team should ensure that ECO drain is included in the design.  $\label{eq:condition}$ 



Figure 3-2 Existing Aco Drain



## 4.0 ITEMS RESULTING FROM THIS ROAD SAFETY AUDIT

## 4.1 GENERAL ITEMS HABOUR

### 4.1.1 PROBLEM

The following elements have not been provided to the audit team for the Stage 1 Road Safety Audit.

- sight lines,
- swept paths.
- drainage
- utilities
- accommodation work.

#### 4.1.2 PROBLEM

#### **General Item Visibility Splays**

The Audit team observed during the site visit no visibility splays have been provided to the audit team. Lack of clarity on visibility for pedestrians and drivers could result in collisions occurring.

#### Recommendations

The designer should show adequate visibility splays at all pedestrian crossing, vehicular accesses and junctions in accordance with the relevant standards.

## 4.1.3 PROBLEM

## **Clash with Existing Public Lighting Pole**

The Audit team observed during the site visit the existing public lighting pole has not been included as part of the proposed design. This Audit are concerned this may result in a clash with the proposed design.

## Recommendation

The design team should show relocation of existing pole.



## 5.0 ITEMS RESULTING FROM THIS ROAD SAFETY AUDIT

## 5.1 GENERAL KEY ROAD

## 5.1.1 PROBLEM

The following elements have not been provided to the audit team for the Stage 1 Road Safety Audit.

- sight lines,
- swept paths.
- drainage
- utilities
- accommodation works.

## 5.1.2 PROBLEM

## **Boundary Treatment**

The Audit team observed during the site visit that no boundary treatment has been provided to protect road users near the pier along an active docking area. This may result in vulnerable road users (inc. pedestrians, cyclists, scooter users, motorcyclists, less abled and mobility impaired users) falling into the water.



Figure 5-1 Boundary Treatment not proposed on design.

#### Recommendations

The designer should show adequate boundary treatment is provided.



## 6.0 AUDIT TEAM STATEMENT

We certify that we have examined the drawings and other information listed in Appendix A and visited the site during the day of the 9<sup>th</sup> of February 2023. We further certify that we are independent from the design team for the scheme. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for improvement that in our opinion should be studied for implementation.

Date:

## **AUDIT TEAM LEADER**

Name: Ronan Murtagh Signed: TII Reference: RM3414512 Date:

Position: Senior Engineer

Organisation: TOBIN Consulting Engineers

Address: Block 10-4,

Blanchardstown Corporate Park,

Dublin 15,

#### **AUDIT TEAM MEMBER**

**TII Reference:** 

Name: Maria Rooney Signed:

Position: Senior Engineer

Organisation: TOBIN Consulting Engineers

MR3384505

Address: Fairgreen House,

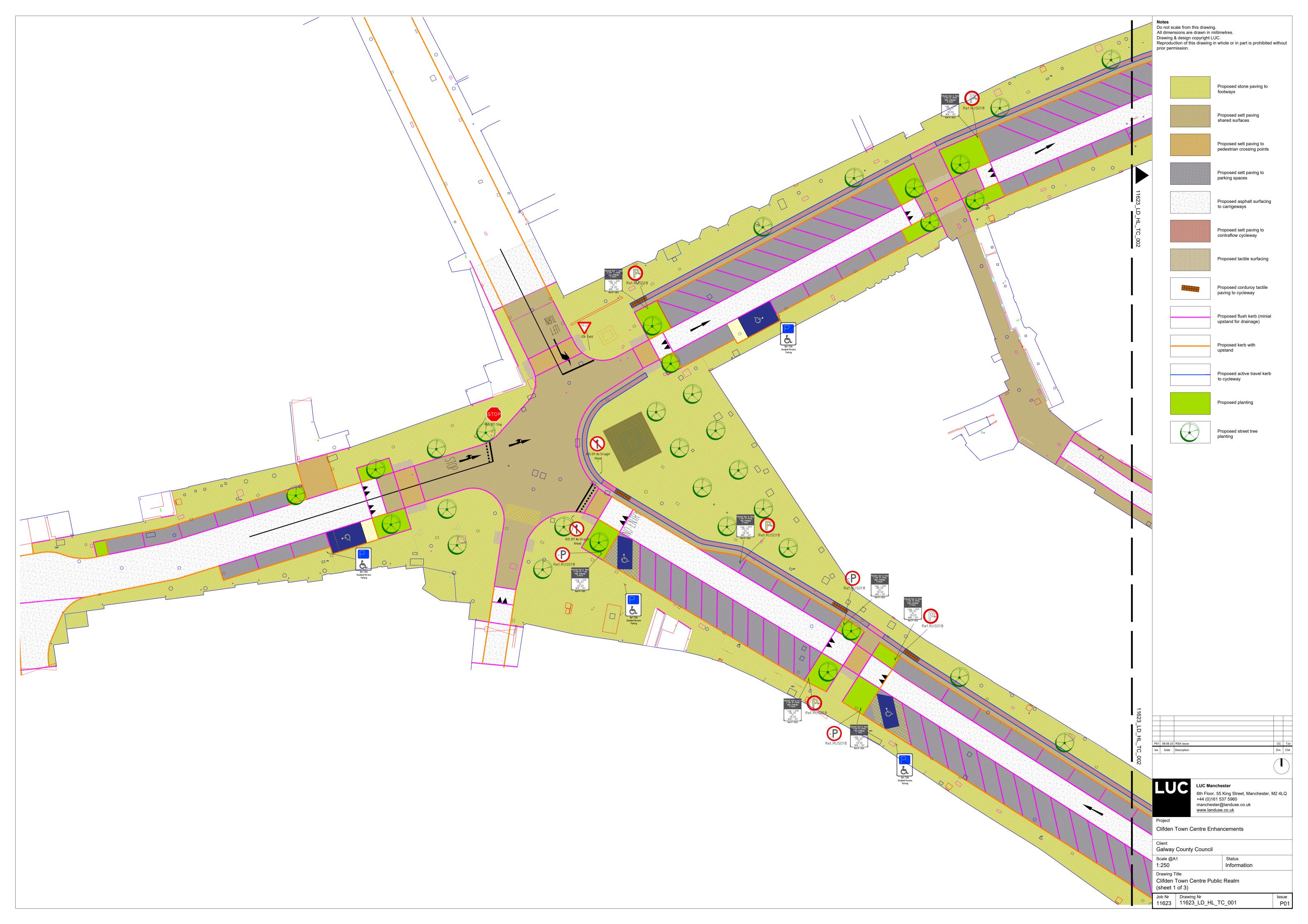
Fairgreen Road,

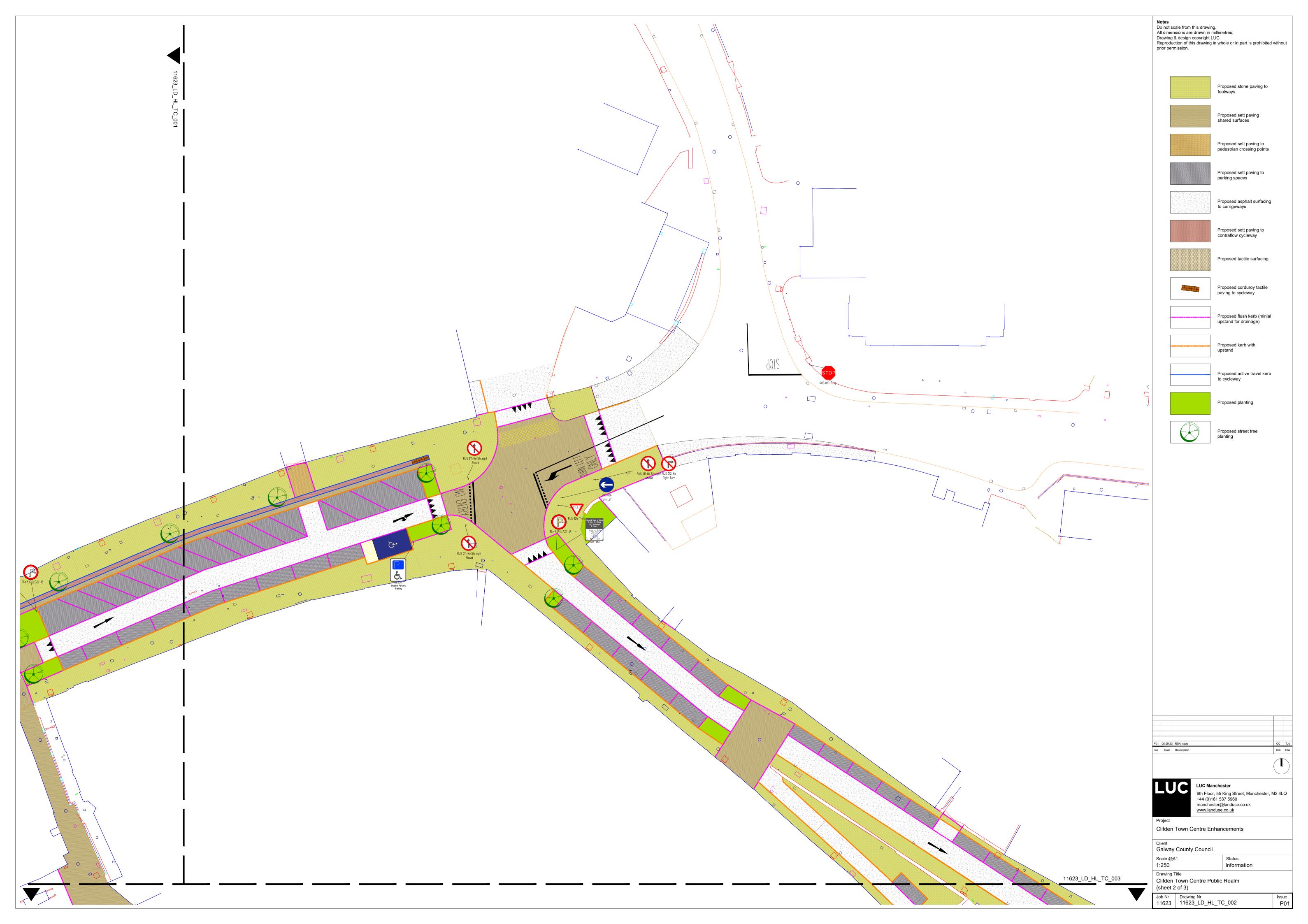
Galway.

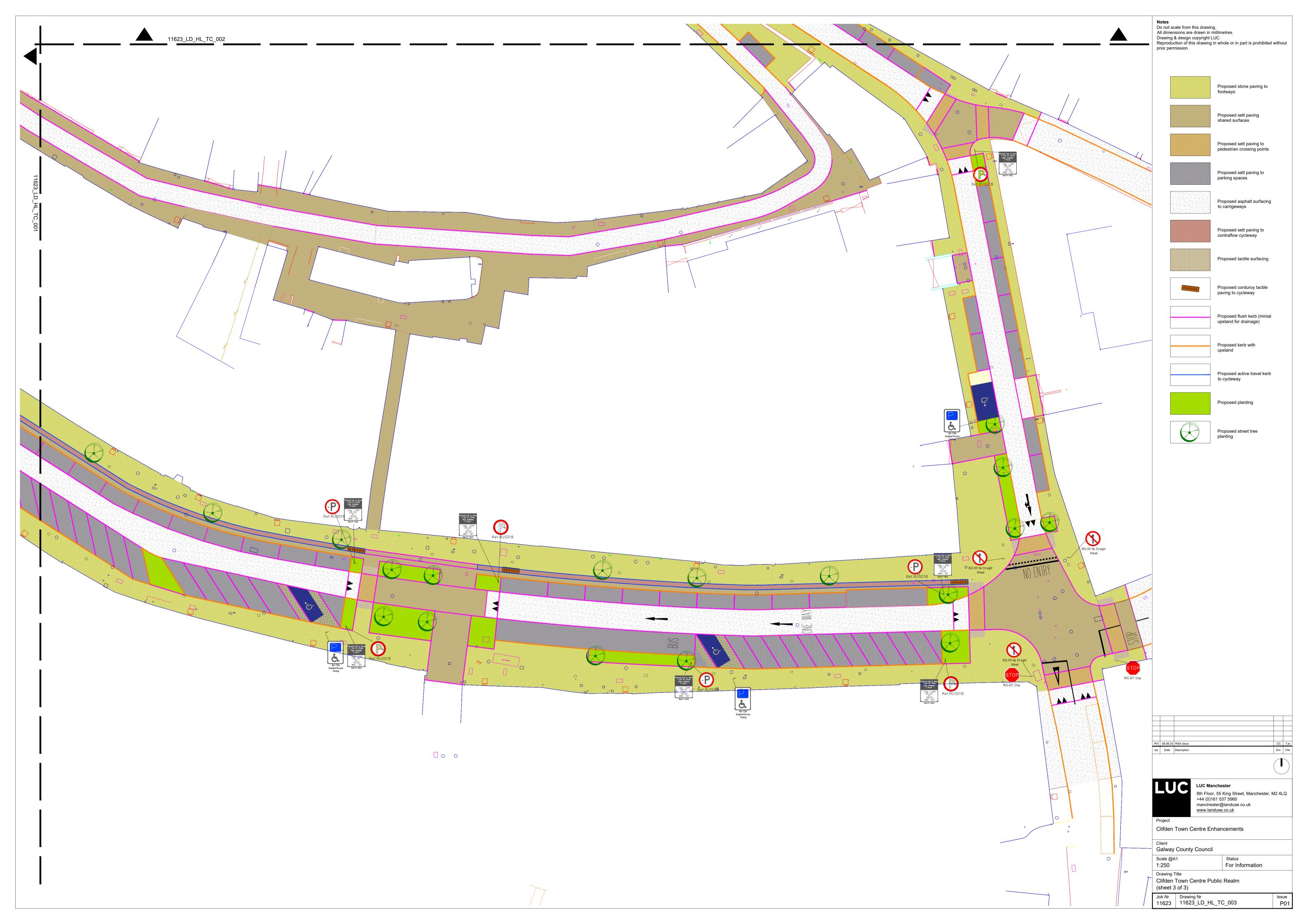


## Appendix A - List of Documents Examined

- Drawings
  - o 11623\_LD\_HL\_TC\_001 Clifden Town Centre Public Realm
  - o 11623\_LD\_HL\_TC\_002 Clifden Town Centre Public Realm
  - o 11623\_LD\_HL\_TC\_003 Clifden Town Centre Public Realm
  - o 11632-LD-PLN-003 Beach Road Quay General Arrangement
  - Harbour Park



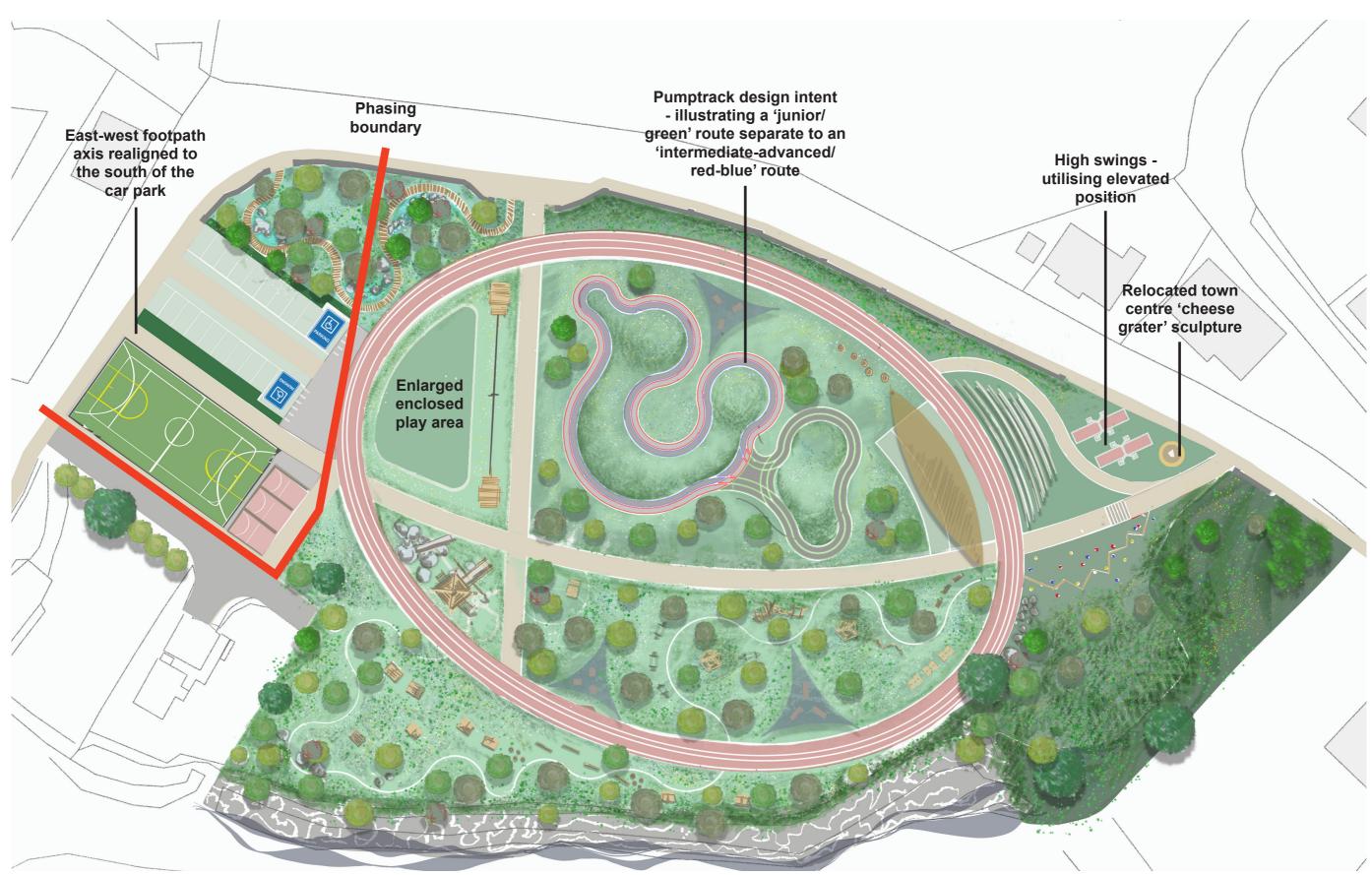






LUC

Harbour Park
Masterplan concept with revised pump track layout, east-west footpath axis, additional entrance sculpture



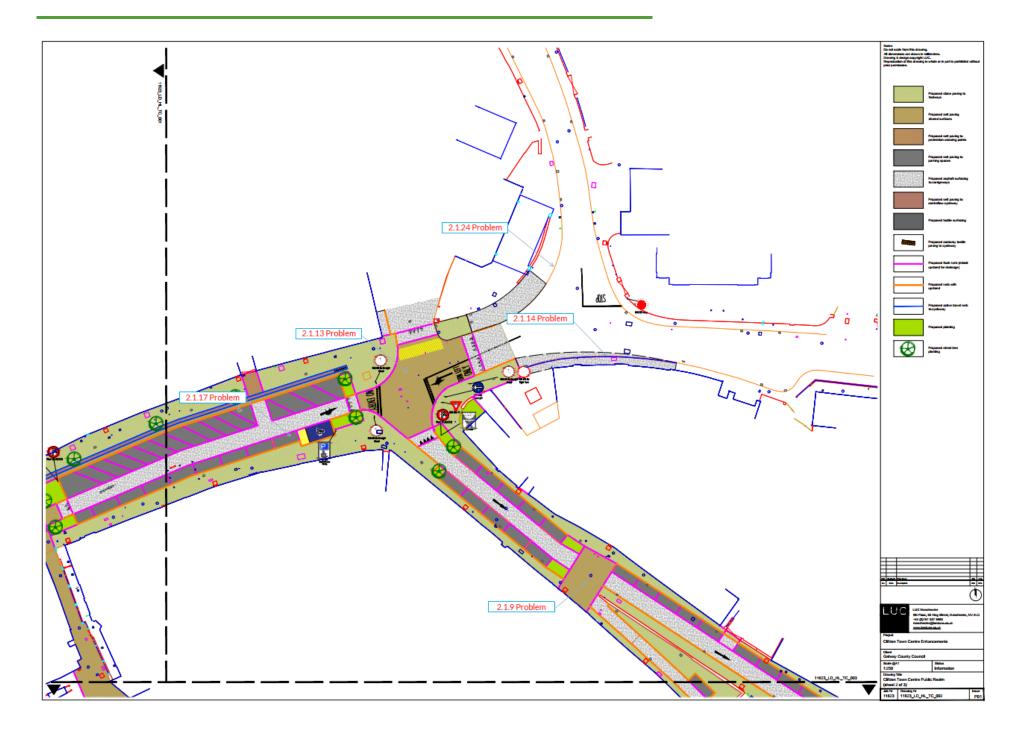


Appendix B – Problem Map

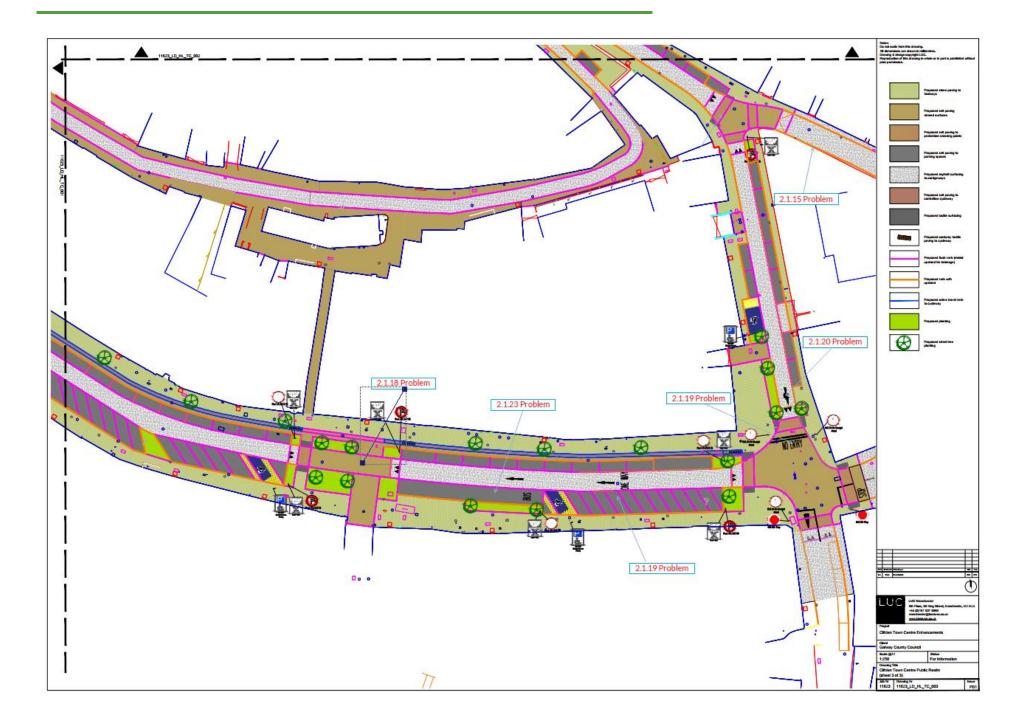














Clifden - Harbour Park for Galway County Council 1 September 2022 Harbour Park General Items Masterplan concept with revised pump track layout, east-west footpath axis, additional entrance sculpture 4.1.1 Problem 4.1.2 Problem Pumptrack design intent - illustrating a 'junior/ green' route separate to an 'intermediate-advanced/ Phasing boundary East-west footpath axis realigned to the south of the car park High swings -utilising elevated position red-blue' route 4.1.3 Problem Relocated town centre 'cheese grater' sculpture Enlarged enclosed play area







Road Safety Audit Feedback Form							
Scheme: Clifden Town Public Realm Enhancement Project Including Clifden Harbour Park and Beach Road Quay Clifden							
Audit Stage: 1							

	To be Completed by Designer				
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended Measures Accepted (yes/no)	Alternative Measures (describe). Give reason for not accepting recommended measure	Alternative Measures or reasons accepted by auditors(yes/no)	
2.1.1	Yes	Yes			
2.1.2	Yes	Yes			
2.1.3	Yes	Yes			
2.1.4	Yes	Yes			
2.1.5	Yes	Yes			
2.1.6	Yes	Yes			
2.1.7	Yes	Yes			
2.1.8	Yes	Yes			
2.1.9	Yes	Yes			
2.1.10	Yes	Yes			
2.1.11	Yes	Yes			
2.1.12	Yes	Yes			
2.1.13	Yes	Yes			
2.1.14	Yes	Yes			
2.1.15	Yes	Yes			

	To Be Completed by Audit Team Leader			
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended Measures Accepted (yes/no)	Alternative Measures (describe). Give reason for not accepting recommended measure	Alternative Measures or reasons accepted by auditors(yes/no)
2.1.16	Yes	Yes		
2.1.17	Yes	Yes		
2.1.18	Yes	Yes		
2.1.19	Yes	Yes		
2.1.20	Yes	Yes		
2.1.21	Yes	Yes		
2.1.22	Yes	Yes		
4.1.1	Yes	Yes		
4.1.2	Yes	Yes		
4.1.3	Yes	Yes		
5.1.1	No	No	Kerbing and public lighting are shown on the LUC Beach Road Quay drawings. Tobin to provide required information on sightlines, swept paths, drainage, utilities.	Details of Kerbing / Lighting, Sight Lines, Swept Paths, Drainage, Utilities and Acc Works to be provided to the Audit Team at the Stage 2 RSA
5.1.2	Yes	Yes		

Signed:	doly Samp.	Designer	Lesley Samuel	Date:	10.09.24
Signed:		Client	Galway County Council	Date:	15 October 2024
Signed:	karan furtaut	Audit Team Leader	Ronan Murtagh	Date:	15/10/2024

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