MWP

Surface Water Management Plan

Cahir Town Centre Public Realm Plan

Tipperary County Council

October 2021

Contents

Appendices

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
22396	22396-6005	A	27/10/2021	IK	PO'D	PO'D	Approval
22396	22396-6005	B	03/11/2021	IK	PO'D	PO'D	Part 8 Planning

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1. General

1.1 Introduction

MWP have developed, on behalf of Nicholas de Jong Associates, a Surface Water Management Plan for public realm works intended for Castle Street, the Square, St. Mary's Road, Old Church Street and Church Street, Cahir, Co. Tipperary.

This report's purpose is to:

- Define the existing storm water drainage system within Castle Street, the Square, St. Mary's Road, Old Church Street and Church Street
- Detail any existing issues within the storm drainage system
- To ascertain if there will be an increase in capacity following the proposed resurfacing works
- Define the proposed storm drainage layout

1.2 Scope of Works

The proposed development includes for public realm refurbishment and enhancement in Cahir's Town Centre comprising the upgrading of the existing Square and approach streets with new high-quality paving, kerbing, landscaping, public lighting, improved street furniture and utility diversions/works.

The proposed development will be carried out on Castle Street, Cahir Town Square, St Mary's Road, Old Church Street and Church Street in the townland of Townparks, Cahir, Co. Tipperary.

Nature and Extent of Proposed Development:

- New raised table shared surface on Castle Street from Cahir Castle to the Castle Car Park entrance to the East and The Mall entrance to the North.
- New kerb alignment and pavement surfaces from the Castle Street Car Park entrance to The Square junction, including upgrading of pedestrian crossing, installation of new public lighting and soft landscaping.
- New streetscape layout for Cahir Square with new alignment design for footpaths, parking areas and trafficked areas incorporating a raised table shared surface from the junction with Castle Street, to the Junction with St Marys Road and to North of The Fountain, new kerb and pavement surfaces throughout The Square, new hard and soft landscaping, new street furniture, new bollards, new bicycle racks, installation of new and upgrade of existing public lighting.
- Alteration of on-street parking for Castle Street, The Square, Church Street, Old Church Street and The Square end of St Mary's Road.
- New pavement surfaces on St. Mary's Road, Old Church Street and Church Street.
- New controlled pedestrian crossings and soft landscaping on Church Street and Old Church St.
- Undergrounding of overhead electrical cables, installation of new public lighting and upgrading of existing public lighting across the entire project area.

- Development of associated drainage services and utilities across the entire project area.
- All associated site works.

1.3 Existing Surface Drainage Castle Street

Castle Street is within Cahir, linking Bridge Street in the West to the Square in the East. The overall storm water surface system discharges to road-side gullies subsequently discharging to surface water drainage system.

There are a large number of both residential and commercial properties within Castle Street. These properties convey surface water from their respected roofs to the underground drainage network. Castle Street consists of a dual-lane carriageway together with on street parking and footpaths on both sides of the street. The Mall Street provides a link with Church Street.

Road gullies are located at various intervals on both sides of the road carriageway. The topographical survey illustrates that there is a generous longitudinal fall along Castle Street. The low point along the street surface approximately coincides with entrance to the Cahir Castle.

The existing drainage infrastructure is currently being further investigated using a GPR survey and in obtaining service record drawings from the service providers.

1.4 Proposed Drainage Castle Street

It is proposed to resurface the bridge by the Cahir Castle and junction with the Mall. This includes a slight re-profiling of the surface to convey surface water to a brick-slot channel located on one side of the road carriageway as well as an introduction of the raised table. It is further proposed to re-pave and realign the footpaths from The Mall junction towards the junction with the Square. As no additional hard surfacing is being introduced, the discharge into the existing storm drainage outlets will remain the same. Whilst there is a slight revision of the gradients within the street, the principles referenced in section 1.3 will remain.

The Square will remain to act as a high point, with storm water draining towards the low point at The Mall junction. Minimum crossfalls of approximately 1:80 for the carriageway and 1:60 for the footpath will be adhered to facilitate the free draining of surface water to nearby gullies and brick-slot drains. This philosophy will ensure that the distribution of the storm water run-off is consistent with the existing situation.

Additional sub-surface drainage outlets are being introduced where required. The proposed drainage layout is appended to this document. In summary:

- The bridge by Cahir Castle: The existing gulley arrangement is being replaced with a brick-slot drain on the northern side of the carriageway. Additional gully to be added on the western side at the base of the raised table when entering/exiting the Bridge. This will minimize the risk of ponding at this location. This gully will be connected to sub-surface drainage.
- Section between the junction with the Mall and junction with the Square: The existing gulley arrangement is being adjusted for the proposed layout of the new footpaths. Additional roadside gullies will be included at the base of the raised table when entering/exiting the Bridge to the west and the Square to the east. This will minimize the risk of ponding at this location. These gullies will be connected to sub-surface drainage.

1.5 Existing Surface Drainage The Square

The overall storm water surface system discharges to road-side gullies subsequently discharging to surface water drainage system.

There are a large number of both residential and commercial properties within the Square. These properties convey surface water from their respected roofs to the underground drainage network. The Square consists of two dual-lane carriageways, travelling north/south, with the western carriageway connecting Castle Street with Church Street, and eastern carriageway connecting St. Mary's Road with Old Church Street.

Road gullies are located at various intervals on both sides of the road carriageways. The topographical survey illustrates that there is a generous longitudinal fall along the Square.

The existing drainage infrastructure is currently being further investigated using a GPR survey and in obtaining service record drawings from the service providers.

1.6 Proposed Drainage The Square

It is proposed to resurface the Square from junctions with Castle Street and St. Mary's Road up to The Galtee Inn. This includes a slight re-profiling of the surface to convey surface water to the brick-slot channels located on sides of the proposed parking and the proposed plaza. It is further proposed to re-pave and realign the footpaths from The Galtee Inn towards the junction with Church Street and the Old Church Street.

Minimum crossfalls of approximately 1:80 for the carriageway and 1:60 for the footpath will be adhered to facilitate the free draining of surface water to nearby gullies and brick-slot drains. This philosophy will ensure that the distribution of the storm water run-off is consistent with the existing situation.

Additional sub-surface drainage outlets are being introduced where required. The proposed drainage layout is appended to this document. In summary:

- The existing gulley and land drain arrangement to be replaced with an arrangement of slot drains. The outlet for these slot drains will avail the nearby storm/combined line.
- The proposed tree pits to be connected with perforated pipe with an overflow pipe that connects into the nearby storm/combined line.
- The existing gulley arrangement is being adjusted for the proposed layout of the new footpaths. Additional roadside gullies will be included at the base of the raised table when entering/exiting the Square from the Church Street. This will minimize the risk of ponding at this location. These gullies will be connected to sub-surface drainage.
- An additional aco drain is proposed to be installed at The Heritage Shop on the South West corner of the square. It is known that this shop sufferers flooding in times of excessive rain which will be mitigated by this proposed aco drain as well as various collection points in the proposed scheme.

1.7 Existing Surface Drainage Church Street

The overall storm water surface system discharges to road-side gullies subsequently discharging to surface water drainage system.

There are a large number of both residential and commercial properties within the Church Street. These properties convey surface water from their respected roofs to the underground drainage network. The street consists of a dual-lane carriageway, travelling north/south connecting the Square to the south and Cashel Road to the north.

Road gullies are located at various intervals on western side of the road carriageway. The topographical survey illustrates that there is a generous longitudinal fall along the Church Street.

The existing drainage infrastructure is currently being further investigated using a GPR survey and in obtaining service record drawings from the service providers.

1.8 Proposed Drainage Church Street

It is proposed to resurface the footpaths from junctions with the Square to the junction with the entryway to the proposed parking to the east. Minimum crossfalls of approximately 1:60 for the footpath will be adhered to facilitate the free draining of surface water to nearby gullies.

It is proposed to resurface the area of the junction with the proposed entryway to the car park. This includes a slight re-profiling of the surface to convey surface water to the brick-slot channels located on the side of the proposed road.

Additional sub-surface drainage outlets are being introduced where required. The proposed drainage layout is appended to this document. In summary:

- The existing gulley arrangement is being adjusted for the proposed layout of the new footpaths. Additional roadside gullies will be included at the base of the raised table next to the proposed entryway into the proposed parking. This will minimize the risk of ponding at this location. These gullies will be connected to sub-surface drainage.
- The existing gulley arrangement to be replaced with an arrangement of slot drains. The outlet for these slot drains will avail the nearby storm/combined line.

1.9 Existing Surface Drainage Old Church Street and St. Mary's Road

The overall storm water surface system discharges to road-side gullies subsequently discharging to surface water drainage system.

Road gullies are located at various intervals on both sides of the road carriageways. The topographical survey illustrates that there is a generous longitudinal fall along the both roads.

The existing drainage infrastructure is currently being further investigated using a GPR survey and in obtaining service record drawings from the service providers.

1.10 Proposed Drainage Old Church Street and St. Mary's Road

It is proposed to re-pave and realign the footpaths on St. Marys' Road from the Square up to the junction with Pearse Street. It is further proposed to re-pave and realign the footpaths from the Square up to the St. Mary's Church. Minimum crossfalls of approximately 1:60 for the footpath will be adhered to facilitate the free draining of surface water to nearby gullies.

Additional sub-surface drainage outlets are being introduced where required. The proposed drainage layout is appended to this document. In summary:

- The existing gulley arrangement is being adjusted for the proposed layout of the new footpaths. Additional roadside gullies will be included at the base of the raised table when entering/exiting the

Square from the St. Mary's Road. This will minimize the risk of ponding at this location. These gullies will be connected to sub-surface drainage.

1.11 Conclusion

The proposed drainage is designed to avail as much as possible of the existing system present. This is to avoid extensive excavation works. Secondly, given the constrained nature of the site, it was important to, insofar as practicable, maintain the existing surface levels. The proposed drainage mimics the existing falls present in the area, with some minor re-profiling introduced. The thresholds of the surrounding buildings have to be retained in any case, so any level changes that can be made are minimal.

There are currently no known problems with the existing storm or foul drainage in this area. A full CCTV survey will be undertaken as part of the works, and this will highlight any failings/defects within the existing system, and these will also be addressed as part of the project.

Appendix 1

Drainage Drawings

REV	DATE	DESCRIPTION	BY	APP
P01	28.10.21	ISSUED FOR INFORMATION	IK	PO'D

Comhairle Contae Thiobraid Árann
Tipperary County Council

Rialtas na hÉireann Government of Ireland

Tionscadal Éireann Project Ireland 2040

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Nicholas de Jong Associates
URBAN DESIGN

PROJECT:
CAHIR TOWN CENTRE PUBLIC REALM PLAN

TITLE:
PROPOSED SURFACE WATER DRAINAGE SHEET 1

DRAWN:	CHECKED:	APPROVED:
IK	PO'D	PO'D
PROJECT NUMBER:	DATE:	SCALE @ A1:
22396	28.10.21	1:250
STATUS DESCRIPTION: FOR INFORMATION		STATUS: S2
DRAWING NUMBER: 22396 - MWP - ZZ - ZZ - DR - C - 2110		REV: P01

CONNECT IN TO EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED ACO DRAIN TO CONNECT INTO THE EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE REMOVED

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE REMOVED

EXISTING GULLY TO BE REMOVED

PROPOSED SLOTTED PIPES CONNECTING TREE PITS WITH AN OVERFLOW PIPE TO CONNECT INTO THE EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE REMOVED

EXISTING GULLY TO BE REMOVED

EXISTING GULLY TO BE REMOVED

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EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED ACO DRAIN TO CONNECT INTO THE EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

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PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED GULLIES TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED ACO DRAIN TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED SLOTTED PIPES CONNECTING TREE PITS WITH AN OVERFLOW PIPE TO CONNECT INTO THE EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

Car Park

STOP

SHEET 2

0 5 10 25 metres

N

REV	DATE	DESCRIPTION	BY	APP
P01	28.10.21	ISSUE FOR INFORMATION	IK	PO'D

Comhairle Contae Thiobraid Árann
Tipperary County Council

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Tionscadal Éireann Project Ireland 2040

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Nicholas de Jong Associates
URBAN DESIGN

PROJECT:
CAHIR TOWN CENTRE PUBLIC REALM PLAN

TITLE:
PROPOSED SURFACE WATER DRAINAGE SHEET 2

DRAWN:	CHECKED:	APPROVED:
IK	PO'D	PO'D
PROJECT NUMBER: 22396	DATE: 28.10.21	SCALE @ A1: 1:250
STATUS DESCRIPTION: FOR INFORMATION		STATUS: S2
DRAWING NUMBER: 22396 - MWP - ZZ - ZZ - DR - C - 2111		REV: P01

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RETAINED

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED ACO DRAIN TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE REMOVED

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RETAINED

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

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PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

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EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

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EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

PROPOSED ACO DRAIN TO CONNECT INTO THE EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE REMOVED

PROPOSED GULLY TO CONNECT INTO EXISTING STORM/COMBINED LINE

EXISTING GULLY TO BE RELOCATED TO THE PROPOSED KERB LINE

STOP

STOP

STOP

N

SHEET 3

0 5 10 25 metres

REV	DATE	DESCRIPTION	BY	APP
P01	28.10.21	ISSUED FOR PLANNING	IK	PO'D

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Nicholas de Jong Associates
URBAN DESIGN

PROJECT:
CAHIR TOWN CENTRE PUBLIC REALM PLAN

TITLE:
PROPOSED SURFACE WATER DRAINAGE SHEET 3

DRAWN:	CHECKED:	APPROVED:
IK	PO'D	PO'D
PROJECT NUMBER:	DATE:	SCALE @ A1:
22396	28.10.21	1:250
STATUS DESCRIPTION:		STATUS:
FOR INFORMATION		S2

DRAWING NUMBER: 22396 - MWP - ZZ - ZZ - DR - C - 2112

REV: P01