Proposed Surface Water Drainage Works

NTA
Údarás Náisiúnta Iompair
National Transport Authority

AECOM
MOTT MACDONALD

BUSCONNECTS DUBLIN
CORE BUS CORRIDORS INFRASTRUCTURE WORKS

CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME

PROPOSED SURFACE WATER DRAINAGE WORKS

DRAWING SERIES NUMBER(S)	DRAWING SERIES DESCRIPTION
BCIDA-ACM-DNG_IX-0001_XX_00-DR-CR-0001	CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME. PROPOSED SURFACE WATER DRAINAGE WORKS. COVER SHEET
BCIDA-ACM-DNG_KP-0001_XX_00-DR-CR-0001	CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME. PROPOSED SURFACE WATER DRAINAGE WORKS. KEY PLAN
BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1001 to 1003	CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME. OVERALL CATCHMENT AREAS
BCIDA-ACM-DNG_RD-0001_XX_00-DR-CR-0006 to 0021	CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME. PROPOSED SURFACE WATER DRAINAGE WORKS

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS COVER SHEET

Date	Scale	Drawn	Checked	Approved
06/12/21	NTS @ A1 NTS @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_IX-0001_XX_00-DR-CD-0001	01 of 01	A	M01

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b. This drawing is to be used for the design element identified in the titlebox. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2021/OSi_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus.The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS KEY PLAN

Date	Scale	Drawn	Checked	Approved
06/12/21	1:12500 @ A1 1:25000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_KP-0001_XX_00-DR-CD-0001	01 of 01	A	M01

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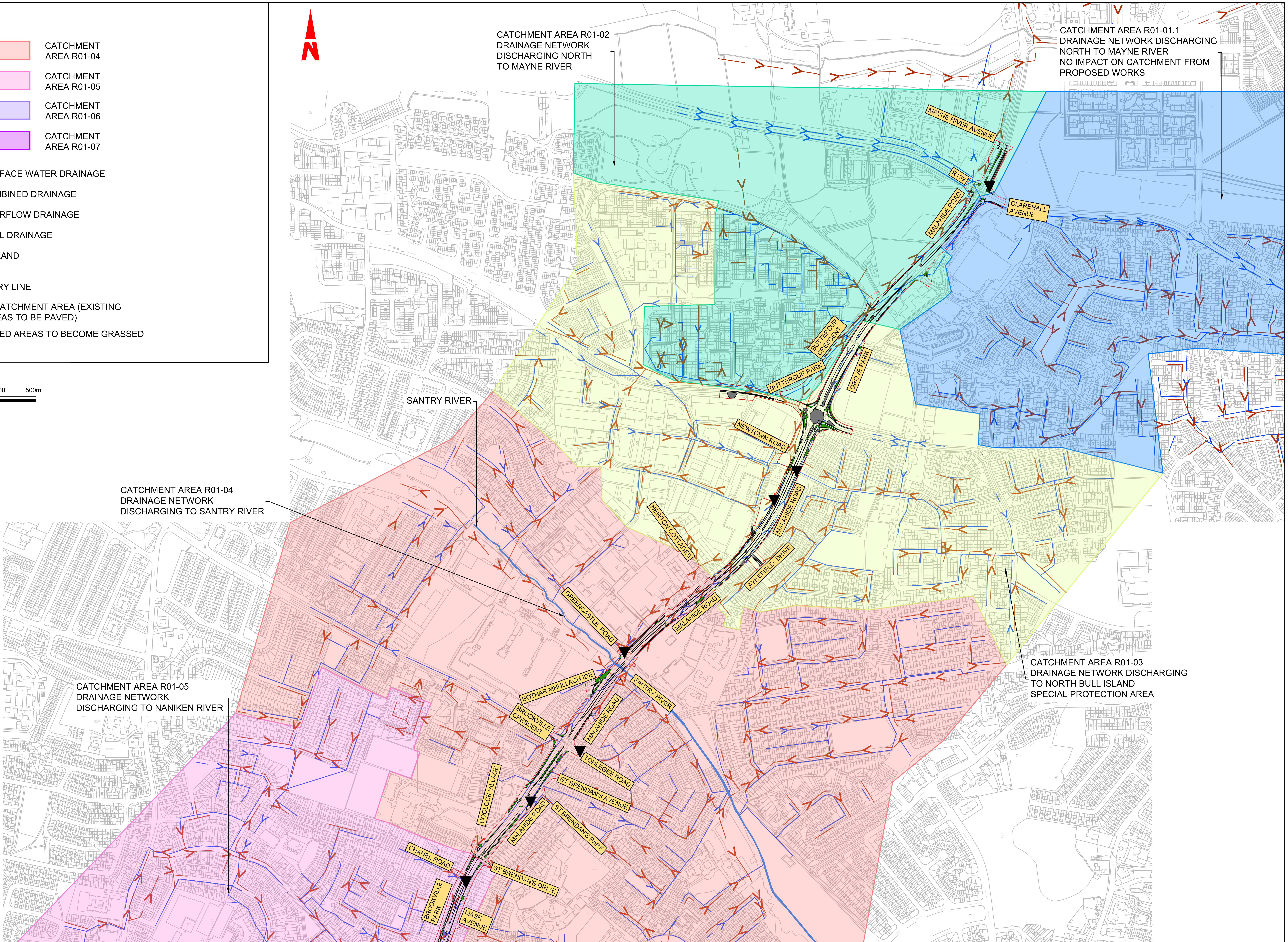
LEGEND:

(blue)	CATCHMENT AREA R01-01.3	(salmon)	CATCHMENT AREA R01-04
(green)	CATCHMENT AREA R01-02	(pink)	CATCHMENT AREA R01-05
(yellow)	CATCHMENT AREA R01-03	(lavender)	CATCHMENT AREA R01-06
▲	DISCHARGE POINT	(magenta)	CATCHMENT AREA R01-07

- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED DRAINAGE
- EXISTING OVERFLOW DRAINAGE
- EXISTING FOUL DRAINAGE
- TEMPORARY LAND ACQUISITION
- SITE BOUNDARY LINE
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED

0 50 100 200 300 400 500m

SCALE 1:5000 @ A1; 1:10000 @ A3



NOTE: WHERE NO SPECIFIC INFORMATION ABOUT NETWORK IS AVAILABLE, THE DISCHARGE LOCATIONS HAVE BEEN ASSUMED BASED ON TERRAIN SLOPE

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Engineering Designer: AECOM, MOTT MACDONALD

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME OVERALL CATCHMENT AREAS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:5000 @ A1 1:10000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1001	01 of 03	A	M01

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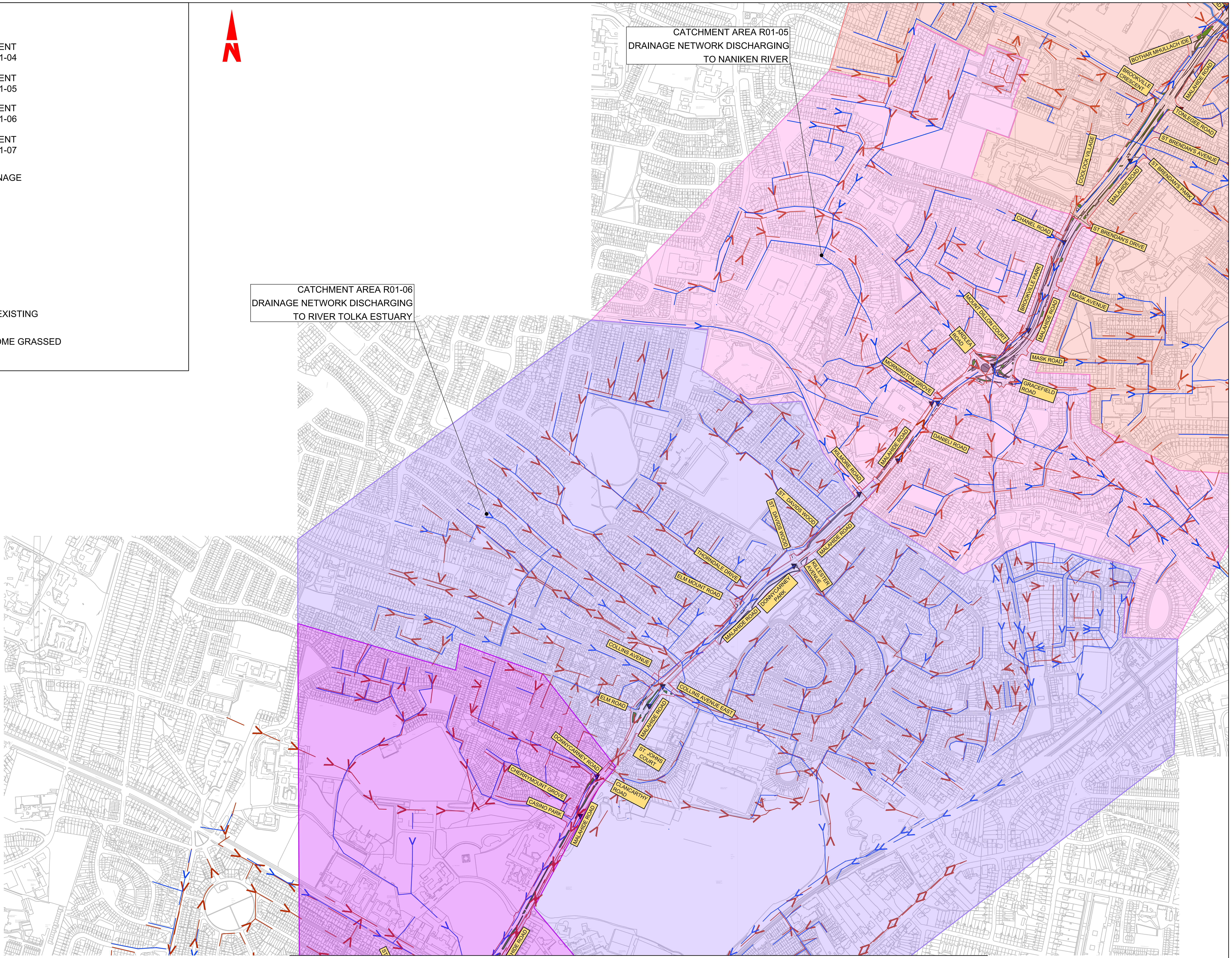

LEGEND:

- CATCHMENT AREA R01-01.3
- CATCHMENT AREA R01-02
- CATCHMENT AREA R01-03
- DISCHARGE POINT
- CATCHMENT AREA R01-04
- CATCHMENT AREA R01-05
- CATCHMENT AREA R01-06
- CATCHMENT AREA R01-07
- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED DRAINAGE
- EXISTING OVERFLOW DRAINAGE
- EXISTING FOUL DRAINAGE
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- EXISTING PAVED AREAS TO BECOME GRASSED

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Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME
OVERALL CATCHMENT AREAS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:5000 @ A1 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1002	02 of 03	A	M01

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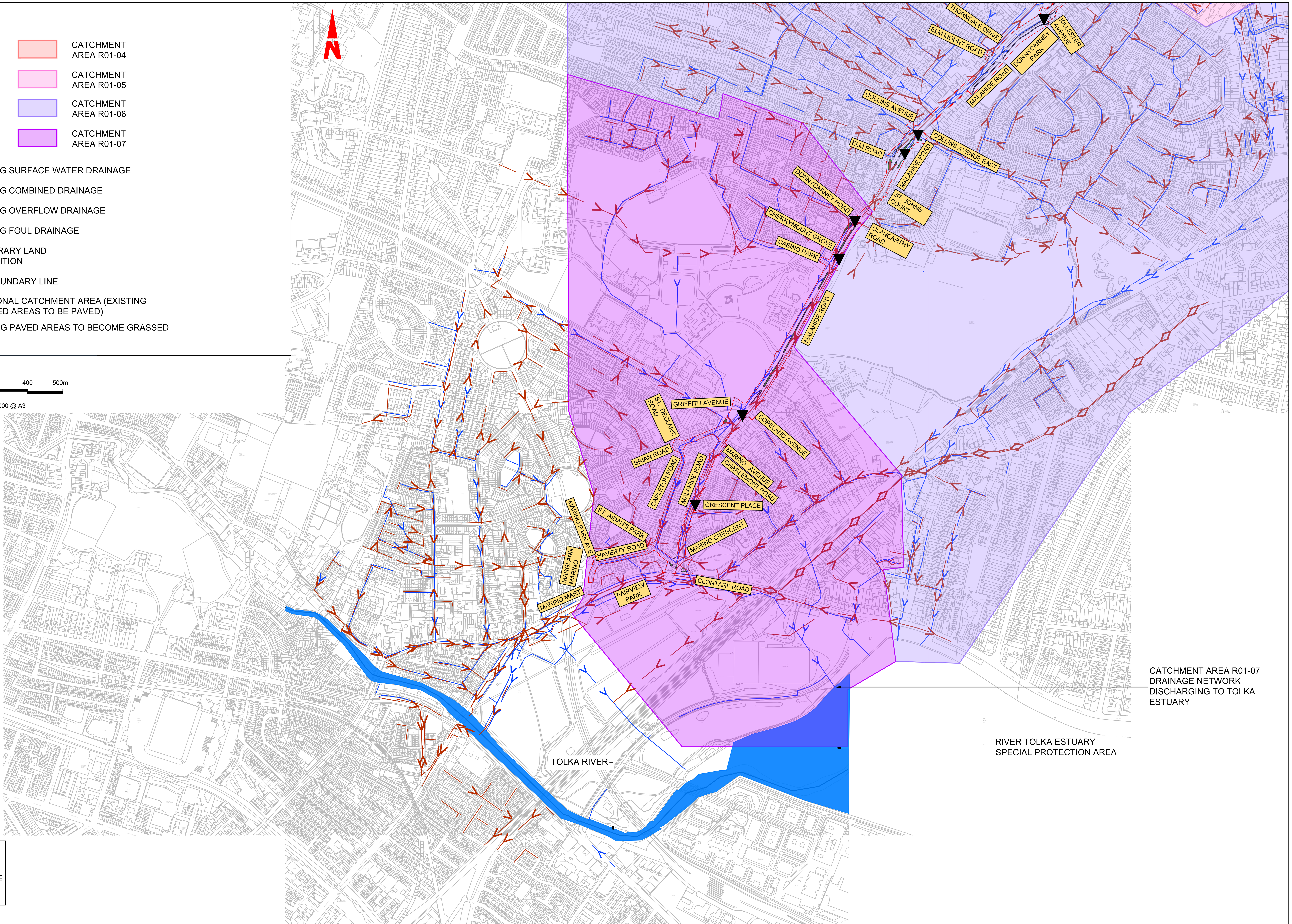
LEGEND:

	CATCHMENT AREA R01-01.3		CATCHMENT AREA R01-04
	CATCHMENT AREA R01-02		CATCHMENT AREA R01-05
	CATCHMENT AREA R01-03		CATCHMENT AREA R01-06
▲	DISCHARGE POINT		CATCHMENT AREA R01-07

- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED DRAINAGE
- EXISTING OVERFLOW DRAINAGE
- EXISTING FOUL DRAINAGE
- TEMPORARY LAND ACQUISITION
- SITE BOUNDARY LINE
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED

0 50 100 200 300 400 500m

SCALE 1:5000 @ A1; 1:10000 @ A3



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Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME OVERALL CATCHMENT AREAS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:5000 @ A1 1:10000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

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BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1003	03 of 03	A	M01

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LEGEND:

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED DRAINAGE NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- SURFACE WATER PIPE - UNDER CONSTRUCTION
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- PROPOSED RODDING EYE
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED NEW TREE
- PROPOSED NEW TREE PIT
- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
- EXISTING GULLY
- SITE BOUNDARY LINE
- TEMPORARY LAND ACQUISITION

NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

Chainage A3056-A3180 (left hand side)
- Carriageway falls toward the left
- Additional impermeable catchment area = 560 m²
- Additional grassed (permeable area) = 103 m²
- Net increase in impermeable area = 457 m²
- Existing gullies connected to the surface water network (size, flow direction and cover depth unknown)
- Existing gullies to be relocated beside the new kerb line and road surface where necessary
- Proposed area for SuDS location 208m² - collecting surface water from footpath, filter drain discharge to existing drainage network - outfall location need to be confirm
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: 2 l/s
- $V_{Vol_{att}}$: 44-88 m³

Chainage A3180-A3390 (left hand side)
- Carriageway falls toward the left
- Additional impermeable catchment area = 235 m²
- Additional grassed (permeable area) = 146 m²
- Net increase in impermeable area = 89 m²
- Existing gullies connected to the DN300 surface water network (cover depth unknown)
- Assumed flow direction compatible with road slope
- Existing gullies to be relocated beside the new kerb line and road surface where necessary
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- $V_{Vol_{att}}$: not required

Chainage A3180-A3390 (right hand side)
- Carriageway falls toward the left
- Additional impermeable catchment area = 178 m²
- Additional grassed (permeable area) = 248 m²
- Net increase in impermeable area - not applicable
- Existing gullies connected to the DN225 or DN300 surface water network (size, flow direction and cover depth unknown)
- Existing gullies to be relocated beside the new kerb line and road surface where necessary
- Further survey required to confirm existing gullies' discharge location and existing surface water network
- ADR: not required
- $V_{Vol_{att}}$: not required

Chainage A3056-A3180 (right hand side)
- Carriageway falls toward the right
- Additional impermeable catchment area = 70 m²
- Additional grassed (permeable area) = 350 m²
- Net increase in impermeable area - not applicable
- Existing gullies connected to the surface water network (size, flow direction and cover depth unknown)
- Existing gullies to be relocated beside the new kerb line and road surface where necessary
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- $V_{Vol_{att}}$: not required

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE.WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

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Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1; 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0006	06 of 21	A	M01

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LEGEND:

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED DRAINAGE NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- SURFACE WATER PIPE - UNDER CONSTRUCTION
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- PROPOSED RODDING EYE
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED NEW TREE
- PROPOSED NEW TREE PIT
- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
- EXISTING GULLY
- SITE BOUNDARY LINE
- TEMPORARY LAND ACQUISITION

NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

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3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE.WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

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Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
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LEGEND:

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- FW — EXISTING FOUL NETWORK
- CB — EXISTING COMBINED DRAINAGE NETWORK
- SW — EXISTING SURFACE WATER NETWORK
- X OF X — EXISTING OVERFLOW PIPE
- P SW P — SURFACE WATER PIPE - UNDER CONSTRUCTION
- SW-NEW — PROPOSED STORM WATER PIPE
- SW-OSP — PROPOSED OVERSIZED PIPE
- FD — PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- RE — PROPOSED RODDING EYE
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED NEW TREE
- PROPOSED NEW TREE PIT
- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
- G — EXISTING GULLY
- SITE BOUNDARY LINE
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Chainage A3770-A4150 (left hand side)
- Carriageway falls towards the left
- Additional impermeable catchment area = 2570 m²
- Additional grassed (permeable area) = 1356 m²
- Net increase in impermeable area = 1214 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225, DN300
- Proposed area for SuDS location 318 m² - collecting surface water from footpath, possible clash with VM and EIR utilities, further survey required in this area,
- Fiter drain connected to existing drainage network DN 225
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: 2 l/s
- $VVol_{att}$: 79-154 m³

Chainage A3770-A3920 (right hand side)
- Carriageway super-elevated and falls toward the left
- Additional impermeable catchment area = 382 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area = 382 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- Further survey required to confimr existing gullies' discharge location and existing road drainage system
- ADR: 2 l/s
- $VVol_{att}$: 33-66 m³

Chainage A3920-A4150 (right hand side)
- Carriageway falls toward the right
- Additional impermeable catchment area = 685 m²
- Additional grassed (permeable area) = 692 m²
- Net increase in impermeable area - not applicable
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- Proposed area for SuDS location 318 m² - collecting surface water from footpath,
- Filter drain connected to existing drainage network - location, diameter and cover depth unknown, possible clash with VM utilities and proposed trees
- Further survey required to confirm existing gullies', SUDs discharge location and existing road drainage system
- ADR: not required
- $VVol_{att}$: not required

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3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE.WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1; 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0008	08 of 21	A	M01

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LEGEND:

ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	PROPOSED RODDING EYE
EXISTING PAVED AREAS TO BECOME GRASSED	PROPOSED MANHOLE
EXISTING GRASSED AREAS TO BE MAINTAINED	PROPOSED INSPECTION CHAMBER
EXISTING FOUL NETWORK	EXISTING TREE
EXISTING COMBINED DRAINAGE NETWORK	EXISTING TREE TO BE REMOVED
EXISTING SURFACE WATER NETWORK	PROPOSED NEW TREE
EXISTING OVERFLOW PIPE	PROPOSED NEW TREE PIT
SURFACE WATER PIPE - UNDER CONSTRUCTION	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
PROPOSED STORM WATER PIPE	
PROPOSED OVERSIZED PIPE	EXISTING GULLY
PROPOSED FILTER DRAIN/PERFORATED PIPE	SITE BOUNDARY LINE
PROPOSED PERMEABLE PAVING	TEMPORARY LAND ACQUISITION

NOTE: PIPE SHAPE CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

Chainage A4150-A4520 (left hand side)
- Carriageway superelevated and falls towards the left
- Additional impermeable catchment area = 950 m²
- Additional grassed (permeable area) = 109 m²
- Net increase in impermeable area = 841 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- Proposed area for SuDS location 339 m² - collecting surface water from carriageway
- Proposed area for SuDS location 229 m² - collecting surface water from carriageway
- Further survey required to confimr existing gullies', proposed SUDs discharge location and existing road drainage system
- Proposed SUDs area with filter drain - discharge to existing road drainage system
- ADR: 2 l/s
- Vol_{att}: 20-40 m³

Chainage A4150-A4520 (right hand side)
- Carriageway falls towards the right
- Additional impermeable catchment area = 658 m²
- Additional grassed (permeable area) = 309 m²
- Net increase in impermeable area = 348 m²
- Proposed area for SuDS location 228 m² - collecting surface water from carriageway
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- Further survey required to confirm existing gullies', proposed SUDs discharge location and existing road drainage system
- Proposed SuDS area with filter drain - discharge to existing road drainage system
- ADR: 2 l/s
- $VVol_{att}$: 65-128 m³

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ABBREVIATIONS:

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1; 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0009	09 of 21	A	M01

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LEGEND:

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED DRAINAGE NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- SURFACE WATER PIPE - UNDER CONSTRUCTION
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- PROPOSED RODDING EYE
- PROPOSED MANHOLE
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- EXISTING TREE
- EXISTING TREE TO BE REMOVED
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- PROPOSED NEW TREE PIT
- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
- EXISTING GULLY
- SITE BOUNDARY LINE
- TEMPORARY LAND ACQUISITION

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0 5.0 10.0 20.0 30.0 40.0 50.0m

SCALE 1:500 @ A1; 1:1000 @ A3

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM; MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0010	10 of 21	A	M01

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LEGEND:

ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	PROPOSED RODDING EYE
EXISTING PAVED AREAS TO BECOME GRASSED	PROPOSED MANHOLE
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EXISTING FOUL NETWORK	EXISTING TREE
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SURFACE WATER PIPE - UNDER CONSTRUCTION	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
PROPOSED STORM WATER PIPE	EXISTING GULLY
PROPOSED OVERSIZED PIPE	SITE BOUNDARY LINE
PROPOSED FILTER DRAIN/PERFORATED PIPE	TEMPORARY LAND ACQUISITION
PROPOSED PERMEABLE PAVING	

NOTE: PIPE SHAPE CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

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SCALE 1:500 @ A1; 1:1000 @ A3

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0011	11 of 21	A	M01

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LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	RE	PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
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FW	EXISTING FOUL NETWORK		EXISTING TREE
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SW	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
X OF X	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
P SW P	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
SW-NEW	PROPOSED STORM WATER PIPE		
SW-OSP	PROPOSED OVERSIZED PIPE	G	EXISTING GULLY
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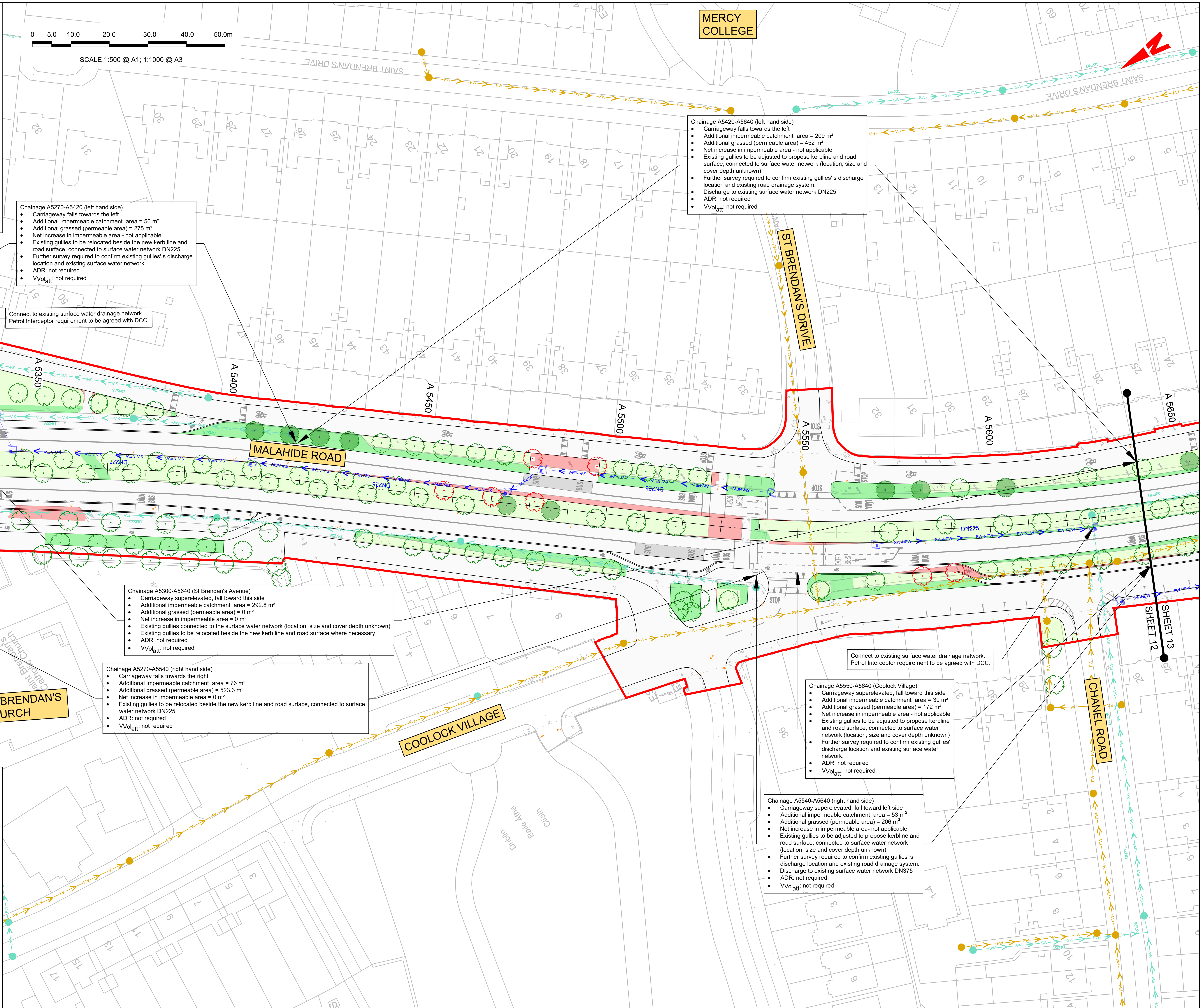

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0012	12 of 21	A	M01

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LEGEND:

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SCALE 1:500 @ A1; 1:1000 @ A3

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Client: NTA Údarás Náisiúnta Iompair National Transport Authority

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Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

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Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0013	13 of 21	A	M01

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LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	RE	PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
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SW-OSP	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
FD	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

NOTE: PIPE SHAPE CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

0 5.0 10.0 20.0 30.0 40.0 50.0m

SCALE 1:500 @ A1; 1:1000 @ A3

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ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1; 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0014	14 of 21	A	M01

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM, MOTT MACDONALD

Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0015	15 of 21	A	M01

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LEGEND:

ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	PROPOSED RODDING EYE
EXISTING PAVED AREAS TO BECOME GRASSED	PROPOSED MANHOLE
EXISTING GRASSED AREAS TO BE MAINTAINED	PROPOSED INSPECTION CHAMBER
EXISTING FOUL NETWORK	EXISTING TREE
EXISTING COMBINED DRAINAGE NETWORK	EXISTING TREE TO BE REMOVED
EXISTING SURFACE WATER NETWORK	PROPOSED NEW TREE
EXISTING OVERFLOW PIPE	PROPOSED NEW TREE PIT
SURFACE WATER PIPE - UNDER CONSTRUCTION	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
PROPOSED STORM WATER PIPE	
PROPOSED OVERSIZED PIPE	EXISTING GULLY
PROPOSED FILTER DRAIN/PERFORATED PIPE	SITE BOUNDARY LINE
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Building Ireland's Future

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Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

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BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0016	16 of 21	A	M01

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LEGEND:

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED DRAINAGE NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- SURFACE WATER PIPE - UNDER CONSTRUCTION
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- PROPOSED RODDING EYE
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- PROPOSED NEW TREE
- PROPOSED NEW TREE PIT
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Project Ireland 2040
Building Ireland's Future

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Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
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Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0017	17 of 21	A	M01

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LEGEND:

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EXISTING PAVED AREAS TO BECOME GRASSED	PROPOSED MANHOLE
EXISTING GRASSED AREAS TO BE MAINTAINED	PROPOSED INSPECTION CHAMBER
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LEGEND:

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SW-NEW	PROPOSED STORM WATER PIPE	G	EXISTING GULLY
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Chainage A7895-A8270 (left hand side)
- Carriageway falls toward this left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Existing gullies probably connected to combined sewer network - further survey required (location, size and cover depth unknown)
- In case gullies' discharge to combined sewer network, proposed surface water network is necessary
- Further survey required to confirm existing gullies's discharge location and existing road drainage system
- Proposed new surface water network DN225-DN600
- Discharge to existing surface water network DN450
- Chainage A7895-A8010 - possible clash with FW and ESB MV UG
- ADR: 60 l/s
- $V_{Vol_{att}}$: 32.0-92.0 m³

Outlet to the existing network
- DN450
- Chainage A6890

Outlet to existing drainage network (River Tolka). Petrol Interceptor requirement to be agreed with DCC.
- DN225
- Chainage A8235
- CL: ~12.04
- IL: ~10.29
- Depth: ~1.70

Chainage A7895-A8270 (right hand side)
- Carriageway falls toward right
- Reuse of existing surface water network
- Additional impermeable catchment area = 3 m²
- Additional grassed (permeable area) = 923 m²
- Net increase in impermeable area - not applicable
- Existing gullies and manholes to be relocated beside the new kerb line and road surface
- ADR: not required
- $V_{Vol_{att}}$: not required

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LEGEND:

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3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE.WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: AECOM / MOTT MACDONALD

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Date	Scale	Drawn	Checked	Approved
06/12/21	1:500 @ A1; 1:1000 @ A3	P.POCZATKO	J.HAWE	C.ACTON

Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status	Rev
BCIDA	ACM		BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0020	20 of 21	A	M01

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LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	RE	PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
FW	EXISTING FOUL NETWORK		EXISTING TREE
CB	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
SW	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
X OF X	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
P SW P	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
SW-NEW	PROPOSED STORM WATER PIPE	G	EXISTING GULLY
SW-OSP	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
FD FD	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

0 5.0 10.0 20.0 30.0 40.0 50.0m

SCALE 1:500 @ A1; 1:1000 @ A3

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