



Appendix B11
Proposed Surface Water
Drainage Works



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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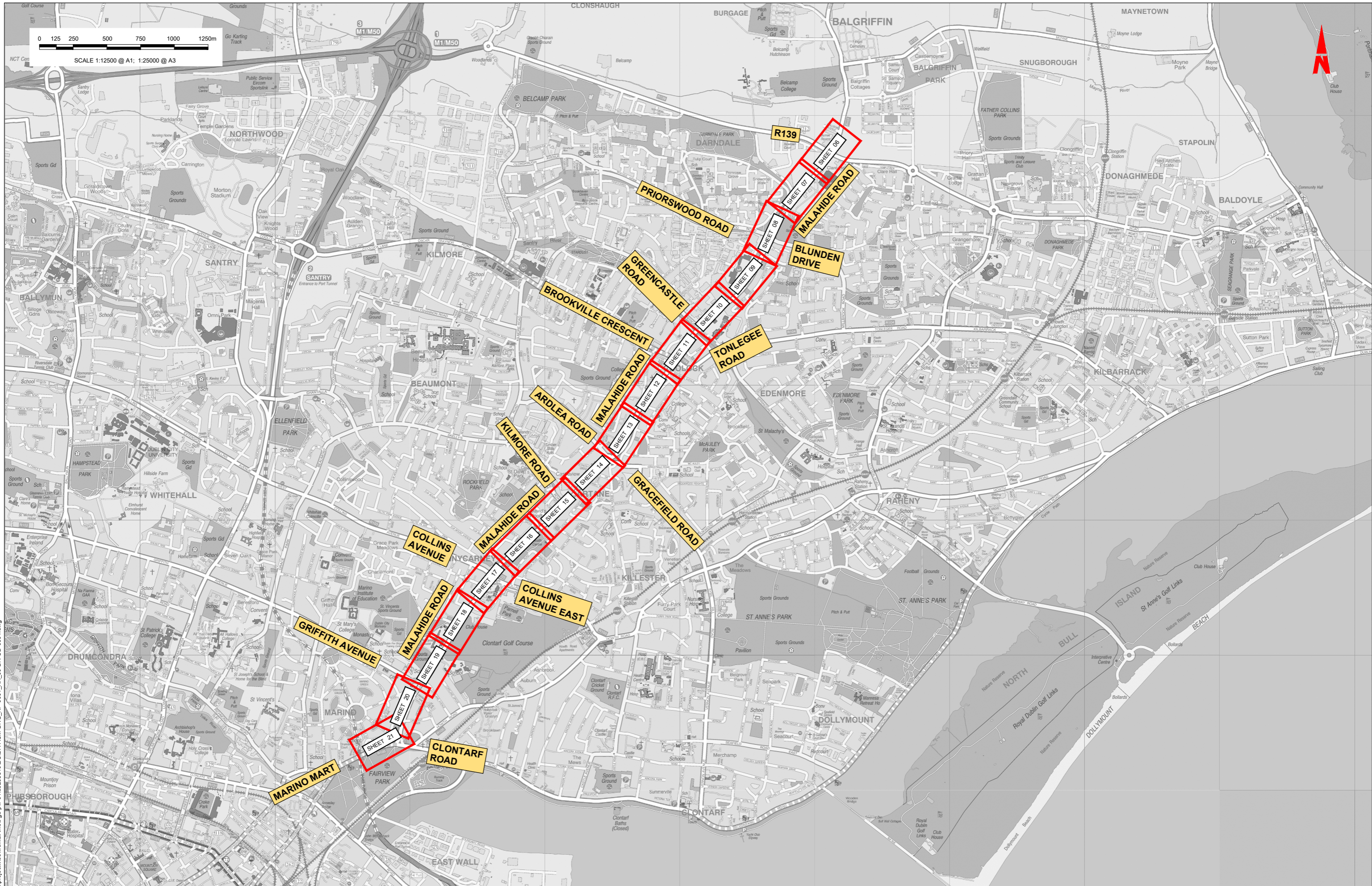
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M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

 Údarás Náisiúnta Iompair National Transport Authority			
Date	06/12/21	Scale	NTS @ A1 NTS @ A3
Project Code	BCIDA	Originator Code	ACM
Client	 Údarás Náisiúnta Iompair National Transport Authority		
Engineering Designer		Drawn	P.POCZATKO
		Checked	J.H.AWE
		Approved	C.ACTON
QMS Code			

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

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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
 KEY PLAN**

Date
 06/12/21
 Scale 1:12500 @ A1
 1:25000 @ A3

Project Code
 BCIDA
 Originator Code
 ACM

Drawn
 P.POCZATKO
 Checked
 J.H.AWE
 Approved
 C.ACTON

QMS Code

Drawing File Name
 BCIDA-ACM-DNG_KP-0001_XX_00-DR-CD-0001

Sheet Number
 01 of 01

Status
 A

Rev
 M01

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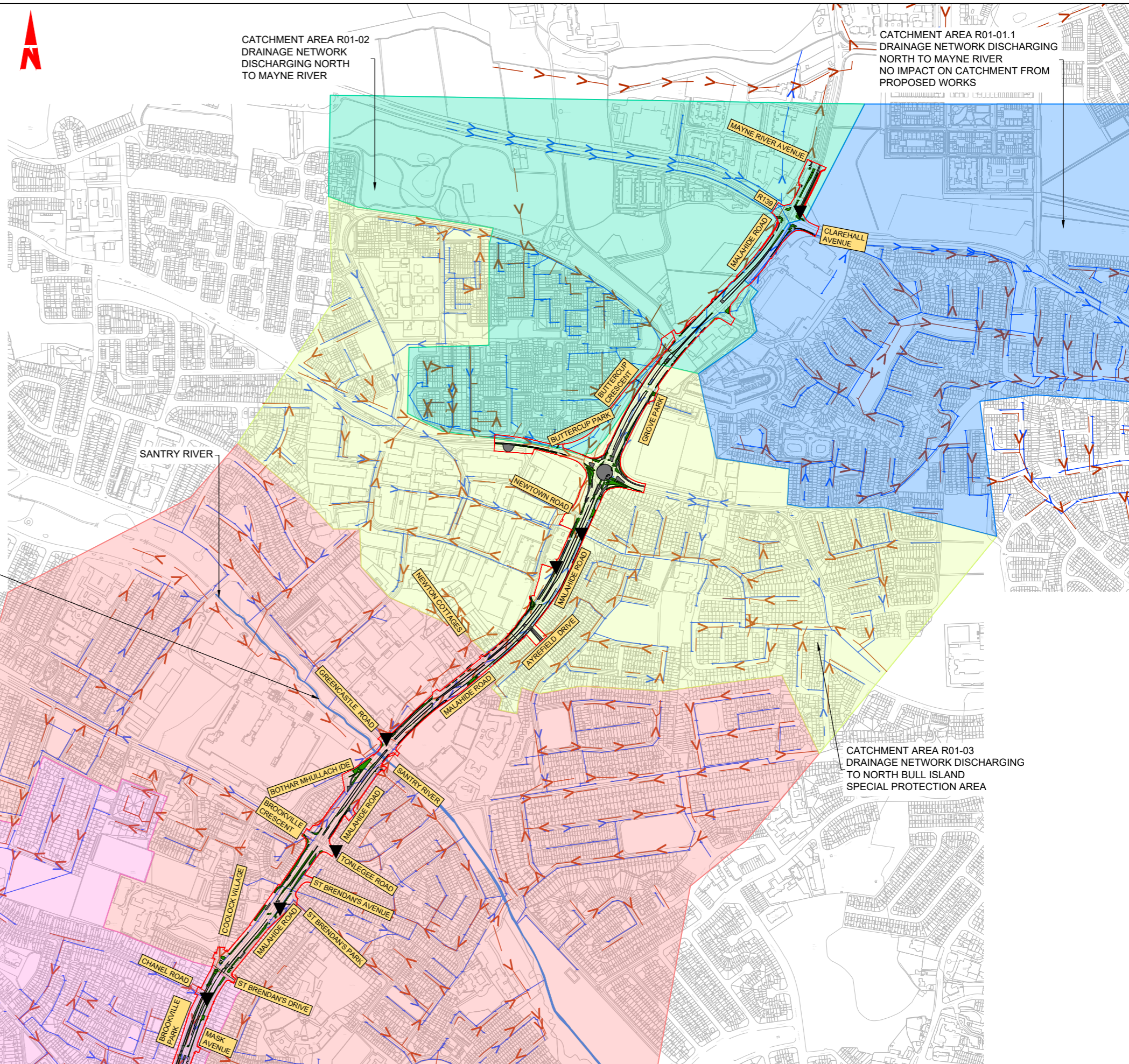
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LEGEND:

- CATCHMENT AREA R01-01.3
- CATCHMENT AREA R01-02
- CATCHMENT AREA R01-03
- DISCHARGE POINT
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- 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
- TEMPORARY LAND ACQUISITION
- SITE BOUNDARY LINE



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



CATCHMENT AREA R01-04
DRAINAGE NETWORK
DISCHARGING TO SANTRY RIVER

CATCHMENT AREA R01-05
DRAINAGE NETWORK
DISCHARGING TO NANIKEN RIVER

CATCHMENT AREA R01-03
DRAINAGE NETWORK DISCHARGING
TO NORTH BULL ISLAND
SPECIAL PROTECTION AREA

CATCHMENT AREA R01-02
DRAINAGE NETWORK
DISCHARGING NORTH
TO MAYNE RIVER

CATCHMENT AREA R01-01.1
DRAINAGE NETWORK DISCHARGING
NORTH TO MAYNE RIVER
NO IMPACT ON CATCHMENT FROM
PROPOSED WORKS

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Client
NTA
 Údarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer
AECOM **M**
MOTT MACDONALD

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME OVERALL CATCHMENT AREAS			
Drawing File Name BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1001	Sheet Number 01 of 03	Status A	Rev 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 | | |



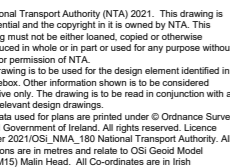
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CATCHMENT AREA R01-06
DRAINAGE NETWORK DISCHARGING TO RIVER TOLKA ESTUARY

CATCHMENT AREA R01-05
DRAINAGE NETWORK DISCHARGING TO NANIKEN RIVER

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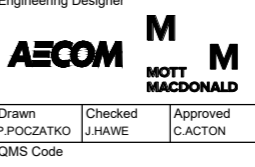
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Date 06/12/21			Scale 1:5000 @ A1 1:1000 @ A3			Drawn P.POCZATKO			Checked J.H.AWE			Approved C.ACTON					
Project Code BCIDA						Originator Code ACM						QMS Code					

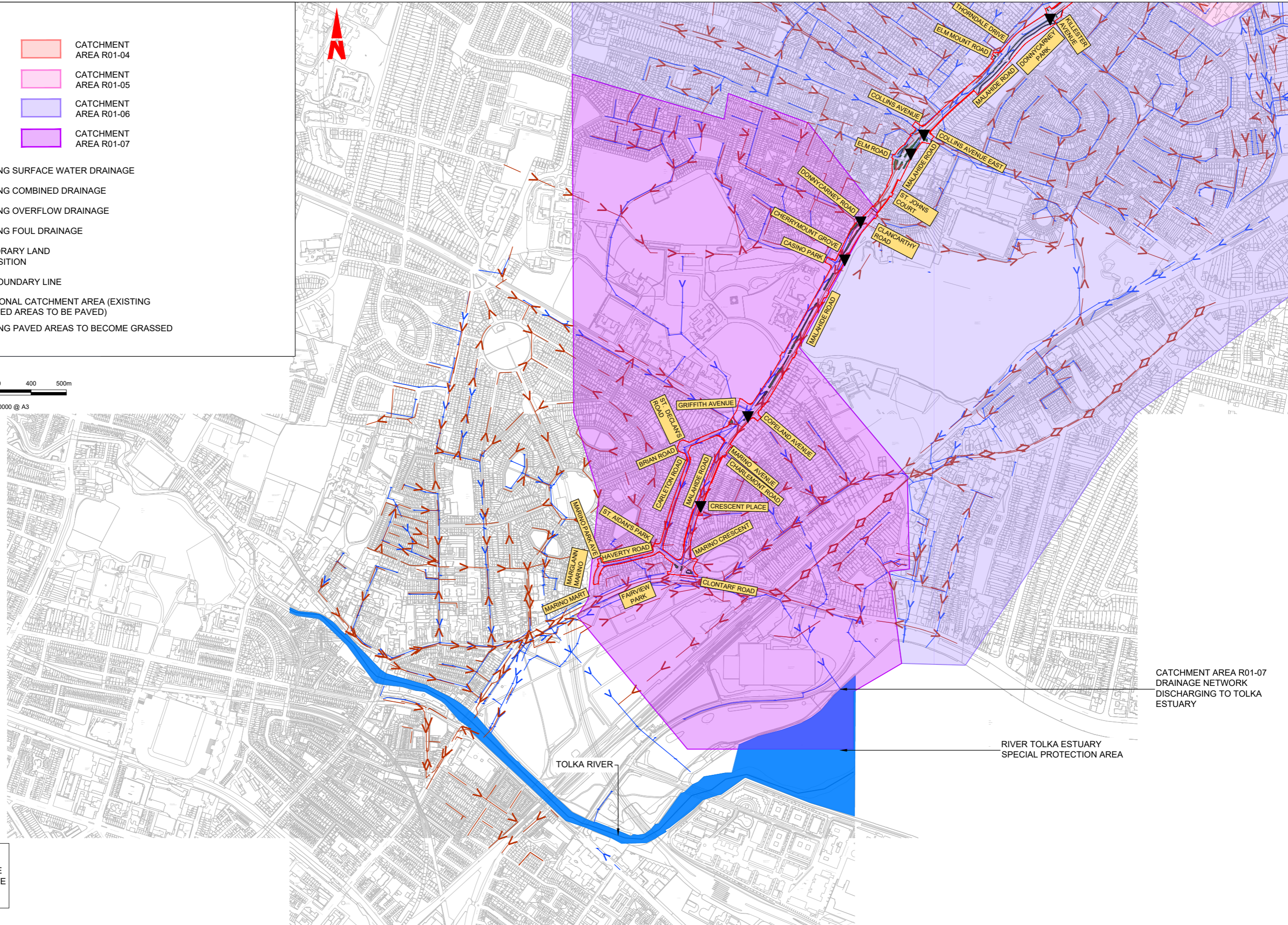


Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME OVERALL CATCHMENT AREAS			
Drawing File Name BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1002	Sheet Number 02 of 03	Status A	Rev M01

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
- 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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Client NTA Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer AECOM M MOTT MACDONALD		
Date 06/12/21	Scale 1:5000 @ A1 1:10000 @ A3	Drawn P.POCZATKO	Checked J.H.AWE	Approved C.ACTON
Project Code BCIDA	Originator Code ACM	QMS Code		

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME OVERALL CATCHMENT AREAS			
Drawing File Name BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-1003	Sheet Number 03 of 03	Status A	Rev M01

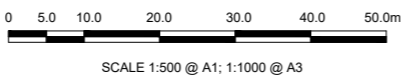
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LEGEND:

- 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 = CIRCLULAR, 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
- VVol_{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
- VVol_{att}: not required

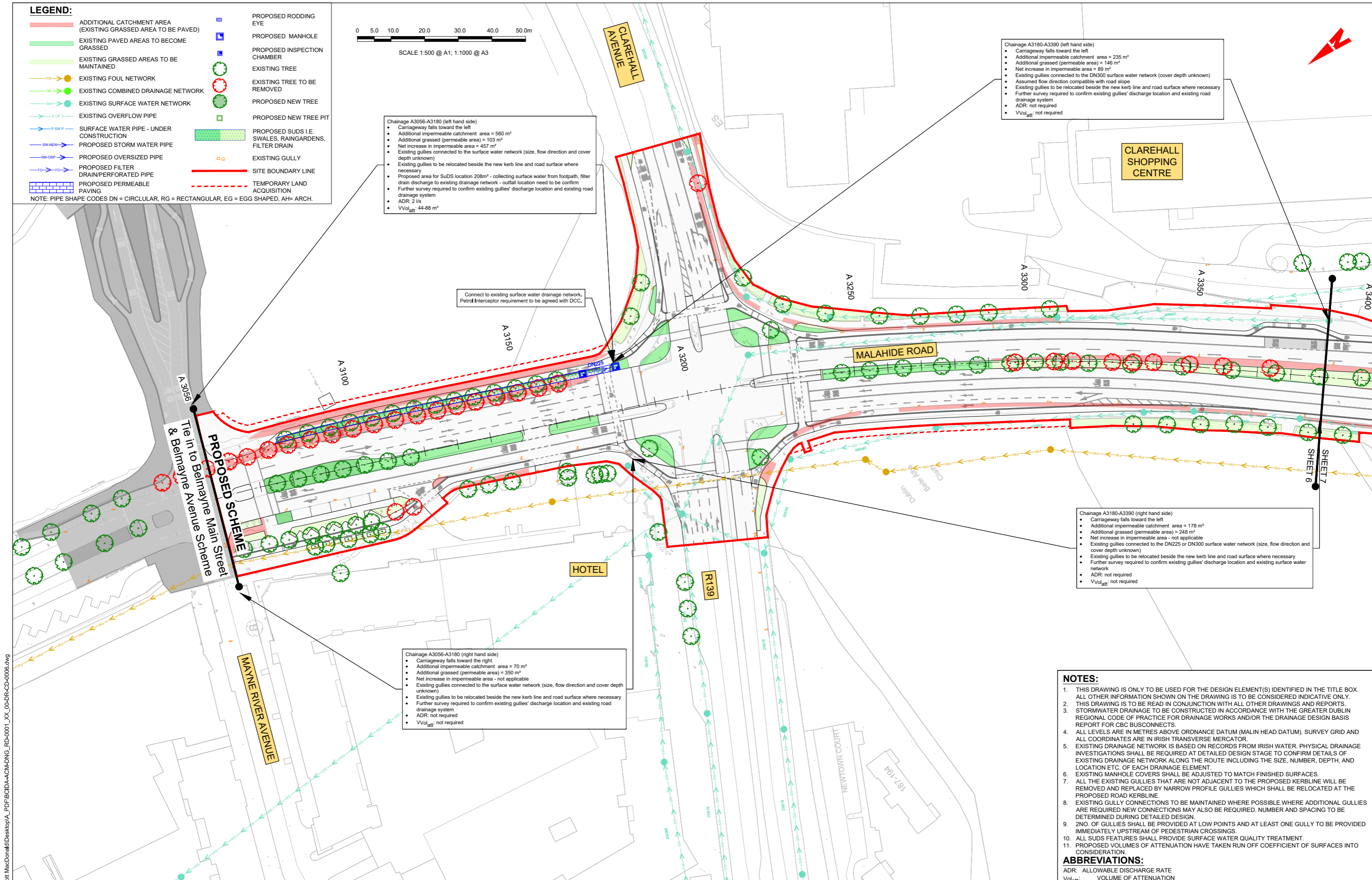
Chainage A3180-A3390 (right hand side)

- 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
- VVol_{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
- VVol_{att}: not required

Connect to existing surface water drainage network. Petrol Interceptor requirement to be agreed with DCC.



NOTES:

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- 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.
- ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
- 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.
- EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
- 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.
- 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.
- 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
- ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
- 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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Rev	Date	Drn	Chk'd	App'd	Description
M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: **NTA**
Údaráis Náisiúnta Iompair
National Transport Authority

Engineering Designer: **AECOM** **MOTT MACDONALD**

Date: 06/12/21
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: P.POCZATKO
Checked: J.H.AWE
Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0006	Sheet Number: 06 of 21	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

0 5.0 10.0 20.0 30.0 40.0 50.0m

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



Chainage A3390-A3495 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 52 m²
- Additional grassed (permeable area) = 87 m²
- Net increase in impermeable area - not applicable
- Existing gullies connected to the DN225 surface water network (cover depth unknown)
- Assumed flow direction consistent 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
- VVol_{att}: not required

Chainage A3495-A3660 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 175 m²
- Additional grassed (permeable area) = 127 m²
- Net increase in impermeable area = 47 m²
- Existing gullies connected to the DN225 surface water network (cover depth, diameter and flow direction 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
- VVol_{att}: Assume that attenuation is achieved by existing drainage network

Chainage A3660-A3770 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 123 m²
- Additional grassed (permeable area) = 101 m²
- Net increase in impermeable area = 22 m²
- Existing gullies connected to existing surface water network (cover depth, diameter, flow direction 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
- VVol_{att}: not required

Chainage A3390-A3510 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 141 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area = 141 m²
- Existing gullies connected to the DN225 surface water network (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
- VVol_{att}: not required

Chainage A3510-A3770 (right hand side)

- Carriageway superelevated, fall towards left side
- Additional impermeable catchment area = 431 m²
- Additional grassed (permeable area) = 97 m²
- Net increase in impermeable area = 333 m²
- Existing gullies connected to the DN900 surface water network (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
- VVol_{att}: Assume that attenuation is achieved by existing drainage network

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		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.

NOTES:

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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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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**

Date: 06/12/21
Scale: 1:500 @ A1, 1:1000 @ A3
Project Code: BCIDA
Originator Code: ACM

Drawn: P.POCZATKO
Checked: J.H.AWE
Approved: C.ACTON

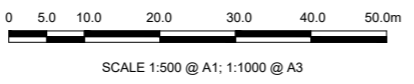
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0007	Sheet Number: 07 of 21	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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 = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.



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,
- Filter 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 confirm 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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 - ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 - 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.
 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 - 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.
 - 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.
 - 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 - 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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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

Date: 06/12/21
 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
 Originator Code: ACM

Drawn: P.POCZATKO
 Checked: J.HAVE
 Approved: C.ACTON

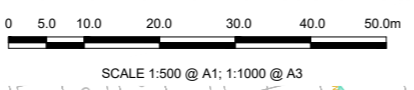
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0008	Sheet Number: 08 of 21	Status: A	Rev: M01

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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
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- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
- EXISTING GULLY
- SITE BOUNDARY LINE
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NOTE: PIPE SHAPE CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.



Chainage A4150-A4520 (left hand side)

- Carriageway super-elevated 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
- 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
- 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
- Vol_{att}: 65-128 m³

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 - 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.
 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 - 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.
 - 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.
 - 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 - 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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Client: **NTA**
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 National Transport Authority

Engineering Designer: **AECOM** **MOTT MACDONALD**

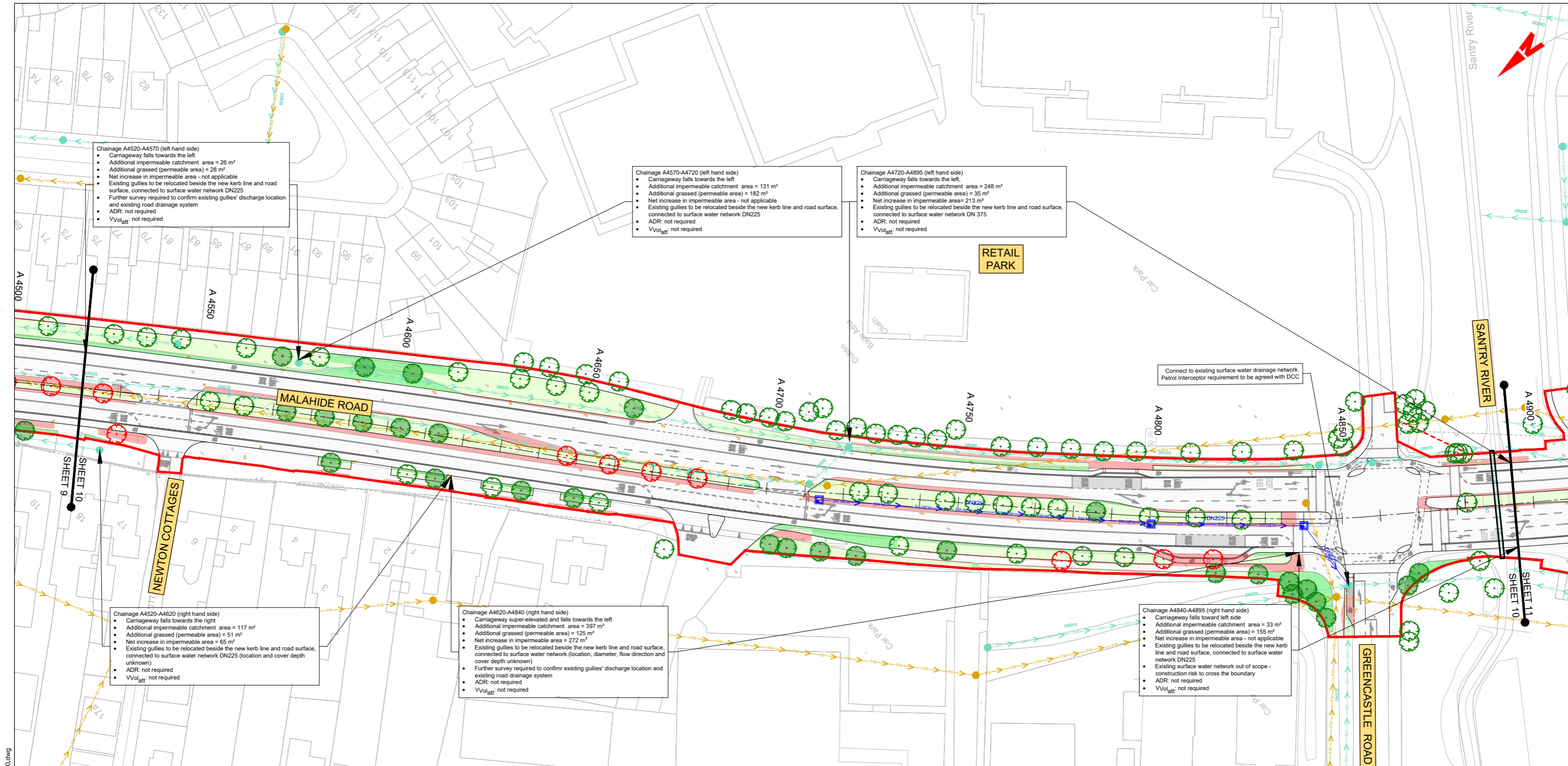
Date: 06/12/21
 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
 Originator Code: ACM

Drawn: P.POCZATKO
 Checked: J.HAWE
 Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
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Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0009	Sheet Number: 09 of 21	Status: A	Rev: M01

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Chainage A4520-A4570 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 26 m²
- Additional grassed (permeable area) = 28 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
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Chainage A4570-A4720 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 131 m²
- Additional grassed (permeable area) = 182 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
- ADR: not required
- VVol_{att}: not required

Chainage A4720-A4895 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 248 m²
- Additional grassed (permeable area) = 35 m²
- Net increase in impermeable area = 213 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN 375
- ADR: not required
- VVol_{att}: not required

Chainage A4520-A4620 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 117 m²
- Additional grassed (permeable area) = 51 m²
- Net increase in impermeable area = 65 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225 (location and cover depth unknown)
- ADR: not required
- VVol_{att}: not required

Chainage A4620-A4840 (right hand side)

- Carriageway super-elevated and falls towards the left
- Additional impermeable catchment area = 397 m²
- Additional grassed (permeable area) = 125 m²
- Net increase in impermeable area = 272 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network (location, diameter, flow direction and cover depth unknown)
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

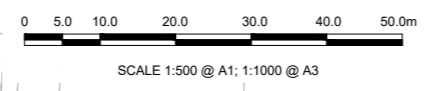
Chainage A4840-A4895 (right hand side)

- Carriageway falls toward left side
- Additional impermeable catchment area = 33 m²
- Additional grassed (permeable area) = 155 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
- Existing surface water network out of scope - construction risk to cross the boundary
- ADR: not required
- VVol_{att}: not required

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		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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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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** and **MOTT MACDONALD**

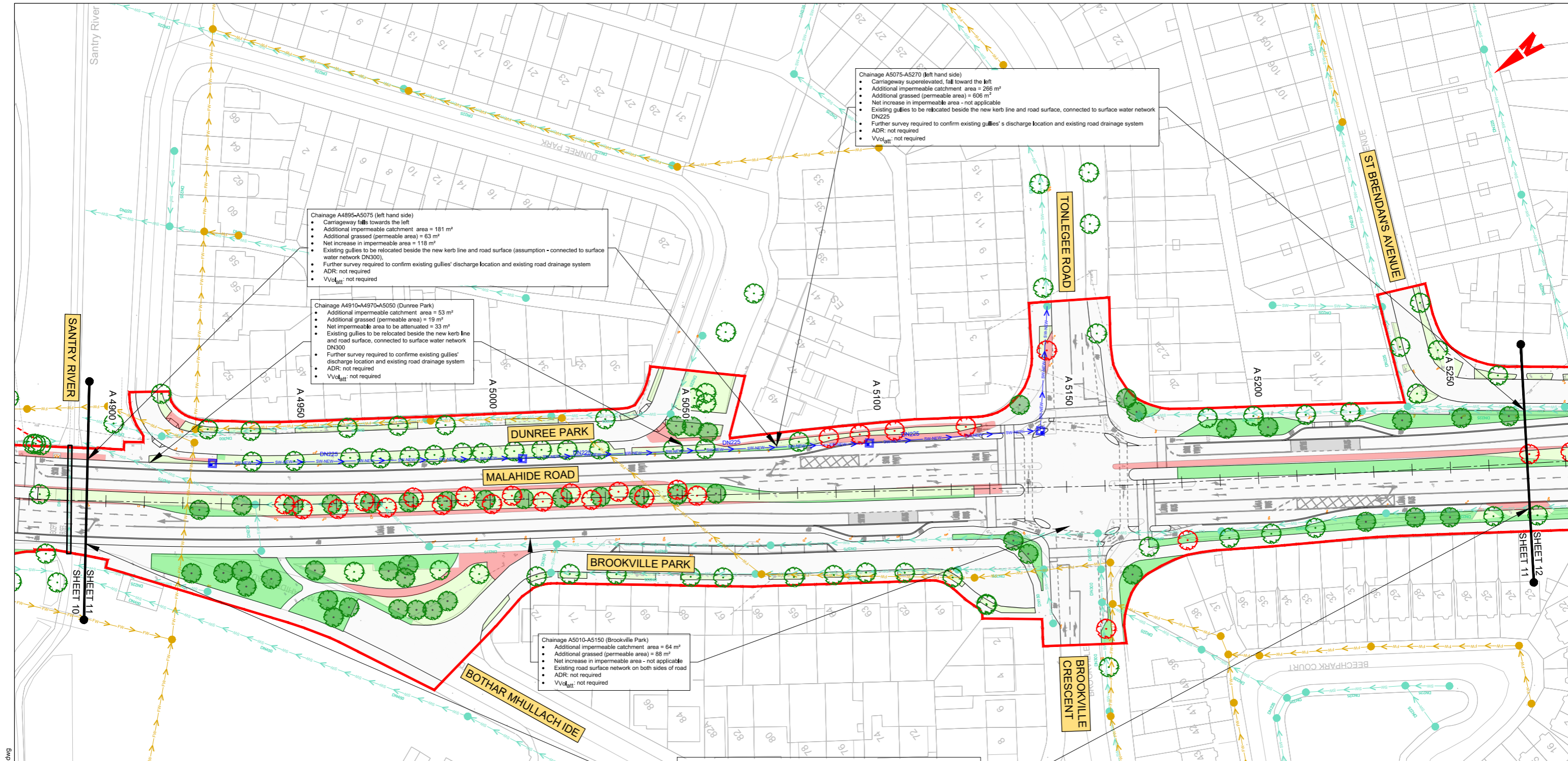
Date: 06/12/21
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: P.POCZATKO
Checked: J.H.AWE
Approved: C.ACTON

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0010	Sheet Number 10 of 21	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Chainage A5075-A5270 (left hand side)

- Carriageway super-elevated, fall towards the left
- Additional impermeable catchment area = 286 m²
- Additional grassed (permeable area) = 606 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
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Chainage A4895-A5075 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 181 m²
- Additional grassed (permeable area) = 63 m²
- Net increase in impermeable area = 118 m²
- Existing gullies to be relocated beside the new kerb line and road surface (assumption - connected to surface water network DN300)
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Chainage A4910-A4970-A5050 (Dunree Park)

- Additional impermeable catchment area = 53 m²
- Additional grassed (permeable area) = 19 m²
- Net increase in impermeable area = 33 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN300
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Chainage A5010-A5150 (Brookville Park)

- Additional impermeable catchment area = 64 m²
- Additional grassed (permeable area) = 88 m²
- Net increase in impermeable area - not applicable
- Existing road surface network on both sides of road
- ADR: not required
- VVol_{att}: not required

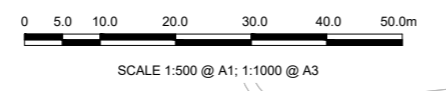
Chainage A4895-A5270 (right hand side)

- Carriageway super-elevated and falls towards the left - Chainage A4895-A5050
- Carriageway falls towards the right - Chainage A5050-A5270
- Additional impermeable catchment area = 285 m²
- Additional grassed (permeable area) = 1046 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 DN375
- ADR: not required
- VVol_{att}: not required

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		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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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
 VVol_{att}: VOLUME OF ATTENUATION

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M01	06/12/21	PP	JH	CA	ISSUE FOR PHASE 4: PLANNING

Client: **NTA**
 Údaráis Náisiúnta Iompair
 National Transport Authority

Engineering Designer: **AECOM** MOTT MACDONALD

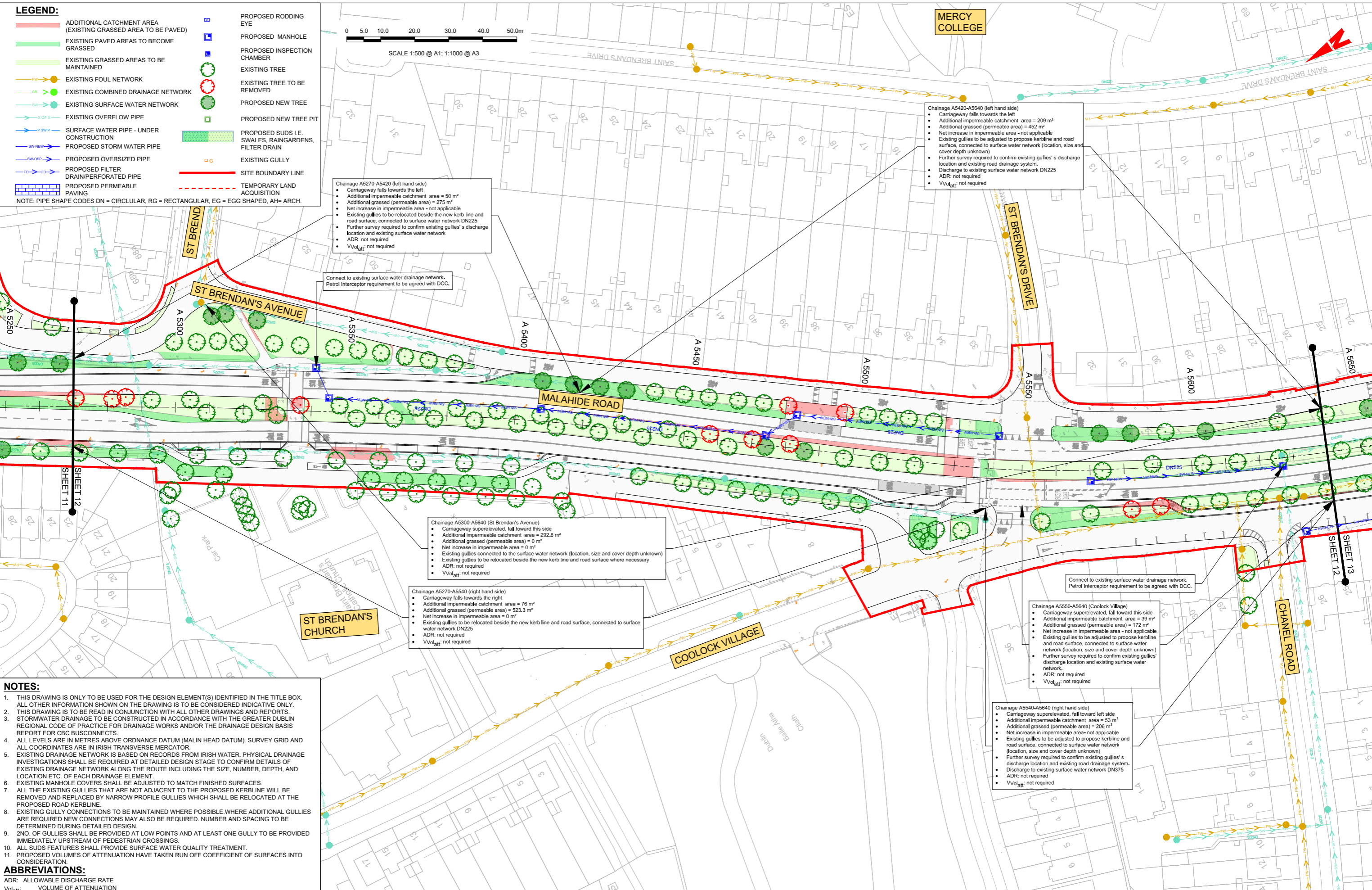
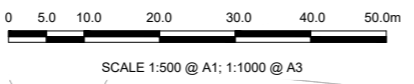
Date: 06/12/21
 Scale: 1:500 @ A1, 1:1000 @ A3
 Drawn: P.POCZATKO
 Checked: J.H.AWE
 Approved: C.ACTON

Project Code: BCIDA
 Originator Code: ACM

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0011	Sheet Number: 11 of 21	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

- 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
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Chainage A5270-A5420 (left hand side)

- Carrageway falls towards the left
- Additional impermeable catchment area = 50 m²
- Additional grassed (permeable area) = 275 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
- Further survey required to confirm existing gullies' discharge location and existing surface water network
- ADR: not required
- VVol_{att}: not required

Chainage A5420-A5640 (left hand side)

- Carrageway falls towards the left
- Additional impermeable catchment area = 209 m²
- Additional grassed (permeable area) = 452 m²
- Net increase in impermeable area - not applicable
- Existing gullies to be adjusted to propose kerbline and road surface, connected to surface water network (location, size and cover depth unknown)
- Further survey required to confirm existing gullies' discharge location and existing road drainage system.
- ADR: not required
- VVol_{att}: not required

Connect to existing surface water drainage network. Petrol Interceptor requirement to be agreed with DCC.

Chainage A5300-A5640 (St Brendan's Avenue)

- Carrageway super-elevated, fall toward this side
- Additional impermeable catchment area = 292,8 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area = 0 m²
- Existing gullies connected to the surface water network (location, size and cover depth unknown)
- Existing gullies to be relocated beside the new kerb line and road surface where necessary
- ADR: not required
- VVol_{att}: not required

Chainage A5270-A5540 (right hand side)

- Carrageway falls towards the right
- Additional impermeable catchment area = 76 m²
- Additional grassed (permeable area) = 523,3 m²
- Net increase in impermeable area = 0 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- ADR: not required
- VVol_{att}: not required

Connect to existing surface water drainage network. Petrol Interceptor requirement to be agreed with DCC.

Chainage A5550-A5640 (Coolock Village)

- Carrageway super-elevated, fall toward this side
- Additional impermeable catchment area = 53 m²
- Additional grassed (permeable area) = 172 m²
- Net increase in impermeable area - not applicable
- Existing gullies to be adjusted to propose kerbline and road surface, connected to surface water network (location, size and cover depth unknown)
- Further survey required to confirm existing gullies' discharge location and existing surface water network
- ADR: not required
- VVol_{att}: not required

Chainage A5540-A5640 (right hand side)

- Carrageway super-elevated, fall toward left side
- Additional impermeable catchment area = 53 m²
- Additional grassed (permeable area) = 206 m²
- Net increase in impermeable area - not applicable
- Existing gullies to be adjusted to propose kerbline and road surface, connected to surface water network (location, size and cover depth unknown)
- Further survey required to confirm existing gullies' discharge location and existing road drainage system.
- Discharge to existing surface water network DN375
- ADR: not required
- VVol_{att}: not required

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 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
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 - 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.
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 - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 - PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
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Engineering Designer: **AECOM** **MOTT MACDONALD**

Date: 06/12/21
 Scale: 1:500 @ A1, 1:1000 @ A3
 Project Code: BCIDA
 Originator Code: ACM

Drawn: P.POCZATKO
 Checked: J.HAWE
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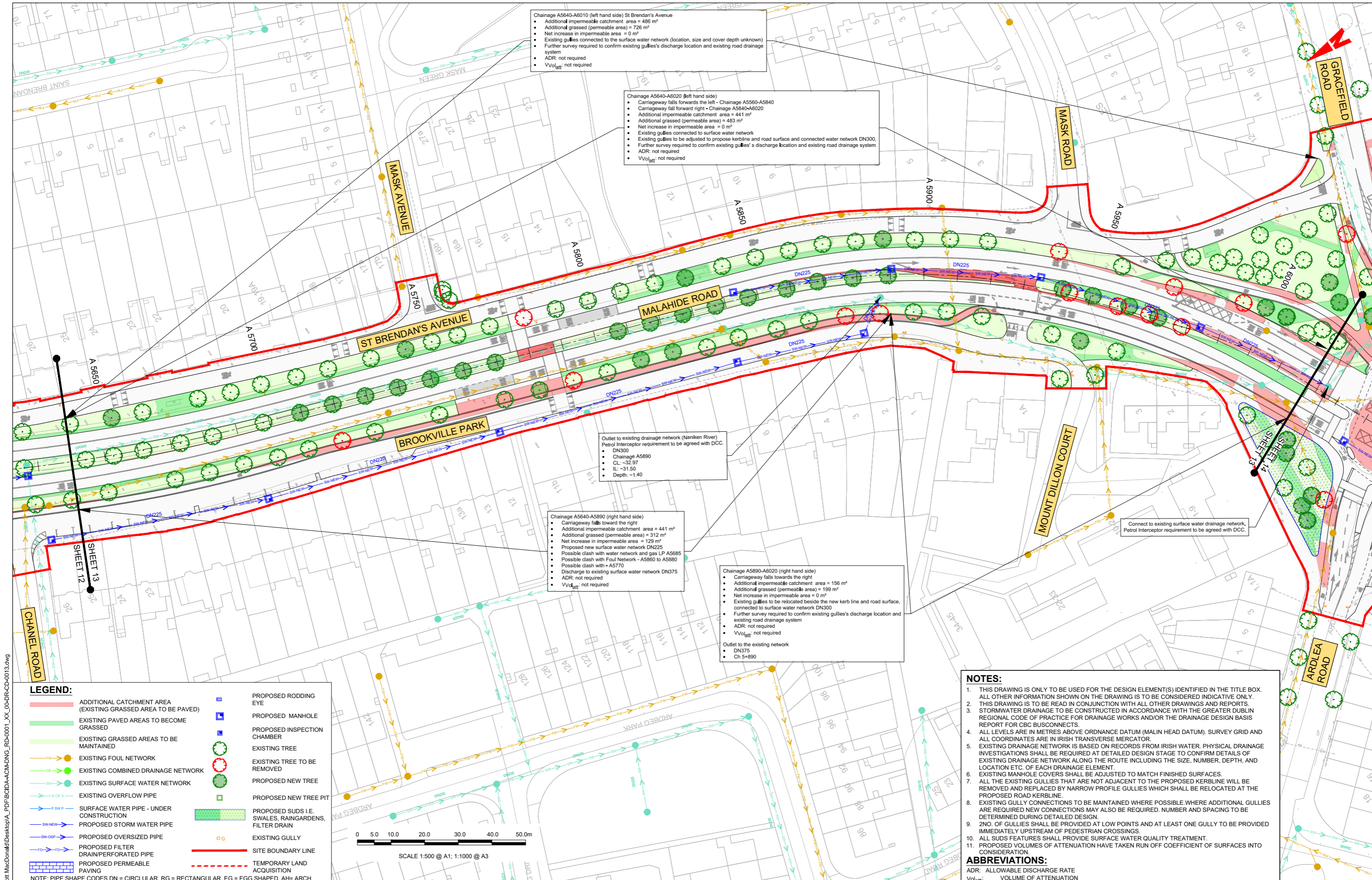
Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

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

Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0012

Sheet Number: 12 of 21
 Status: A
 Rev: M01

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Chainage A5640-A6010 (left hand side) St Brendan's Avenue

- Additional impermeable catchment area = 486 m²
- Additional grassed (permeable area) = 726 m²
- Net increase in impermeable area = 0 m²
- Existing gullies connected to the surface water network (location, size and cover depth unknown)
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Chainage A5640-A6020 (left hand side)

- Carriageway falls forwards the left - Chainage A5560-A5840
- Carriageway fall forward right - Chainage A5840-A6020
- Additional impermeable catchment area = 441 m²
- Additional grassed (permeable area) = 483 m²
- Net increase in impermeable area = 0 m²
- Existing gullies connected to surface water network
- Existing gullies to be adjusted to propose kerbline and road surface and connected water network DN300.
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Outlet to existing drainage network (Naniken River)

- Petrol Interceptor requirement to be agreed with DCC.
- DN300
- Chainage A5890
- CL: -32.97
- IL: -31.50
- Depth: -1.40

Chainage A5640-A5890 (right hand side)

- Carriageway falls toward the right
- Additional impermeable catchment area = 441 m²
- Additional grassed (permeable area) = 312 m²
- Net increase in impermeable area = 129 m²
- Proposed new surface water network DN225
- Possible clash with water network and gas LP A5685
- Possible clash with Foul Network - A5860 to A5880
- Possible clash with - A5770
- Discharge to existing surface water network DN375
- ADR: not required
- VVol_{att}: not required

Chainage A5890-A6020 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 156 m²
- Additional grassed (permeable area) = 199 m²
- Net increase in impermeable area = 0 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN300
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

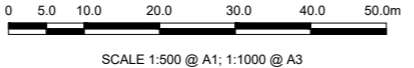
Outlet to the existing network

- DN375
- Ch 5+890

LEGEND:

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

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



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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.
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11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

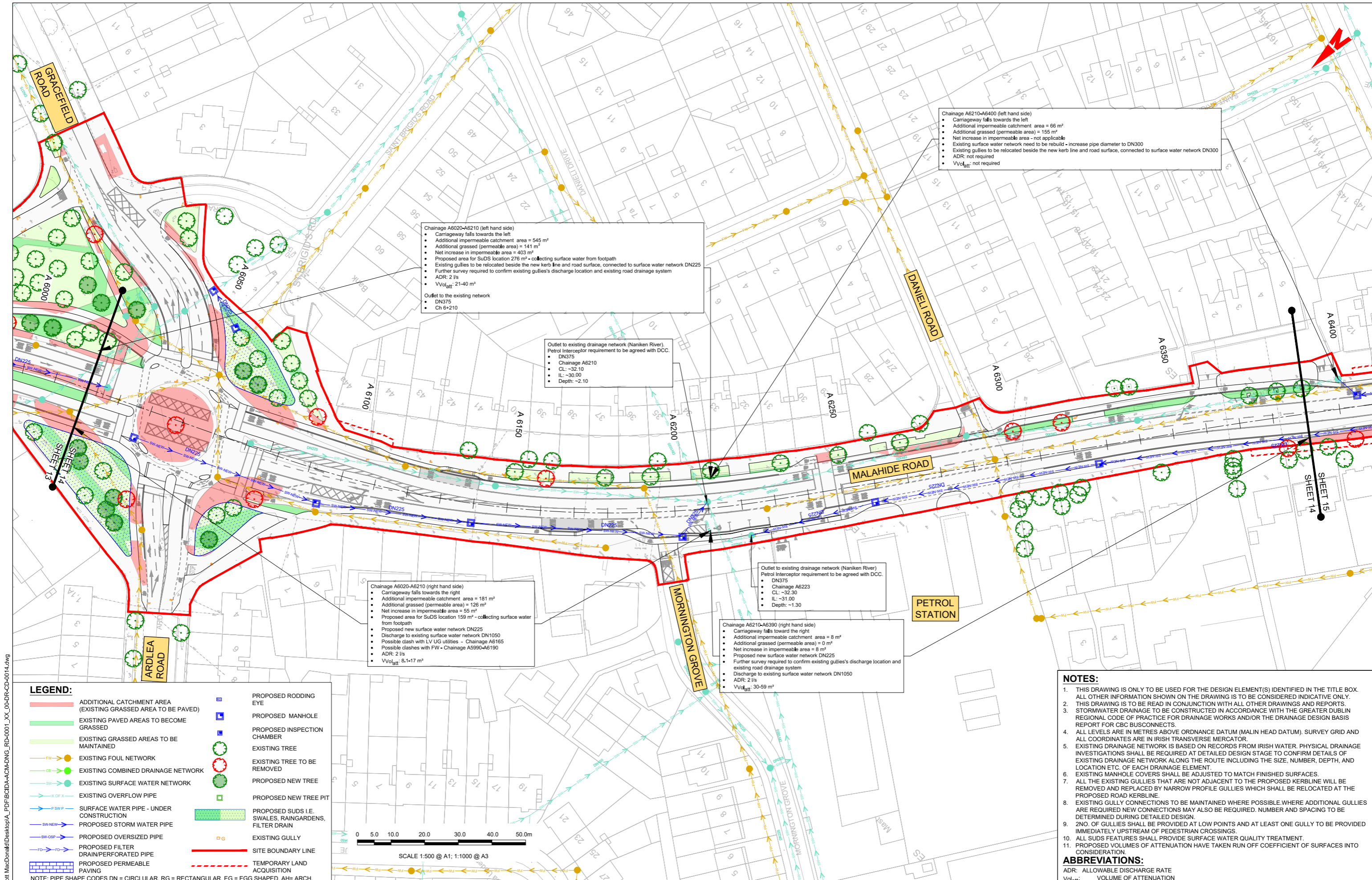
ABBREVIATIONS:

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

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Chainage A6210-A6400 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 66 m²
- Additional grassed (permeable area) = 155 m²
- Net increase in impermeable area - not applicable
- Existing surface water network need to be rebuilt - increase pipe diameter to DN300
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN300
- ADR: not required
- VVol_{att}: not required

Chainage A6020-A6210 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 545 m²
- Additional grassed (permeable area) = 141 m²
- Net increase in impermeable area = 403 m²
- Proposed area for SuDS location 276 m² - collecting surface water from footpath
- 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's discharge location and existing road drainage system
- ADR: 2 l/s
- VVol_{att}: 21-40 m³

Outlet to the existing network

- DN375
- Ch 6+210

Outlet to existing drainage network (Naniken River), Petrol Interceptor requirement to be agreed with DCC.

- DN375
- Chainage A6210
- CL: -32.10
- IL: -30.00
- Depth: -2.10

Chainage A6020-A6210 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 181 m²
- Additional grassed (permeable area) = 126 m²
- Net increase in impermeable area = 55 m²
- Proposed area for SuDS location 159 m² - collecting surface water from footpath
- Proposed new surface water network DN225
- Discharge to existing surface water network DN1050
- Possible clash with LV UG utilities - Chainage A6165
- Possible clashes with FW - Chainage A5990-A6190
- ADR: 2 l/s
- VVol_{att}: 8.1-17 m³

Outlet to existing drainage network (Naniken River), Petrol Interceptor requirement to be agreed with DCC.

- DN375
- Chainage A6223
- CL: -32.30
- IL: -31.00
- Depth: -1.30

Chainage A6210-A6390 (right hand side)

- Carriageway falls toward the right
- Additional impermeable catchment area = 8 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area = 8 m²
- Proposed new surface water network DN225
- Further survey required to confirm existing gullies's discharge location and existing road drainage system
- Discharge to existing surface water network DN1050
- ADR: 2 l/s
- VVol_{att}: 30-59 m³

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		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
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ABBREVIATIONS:

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

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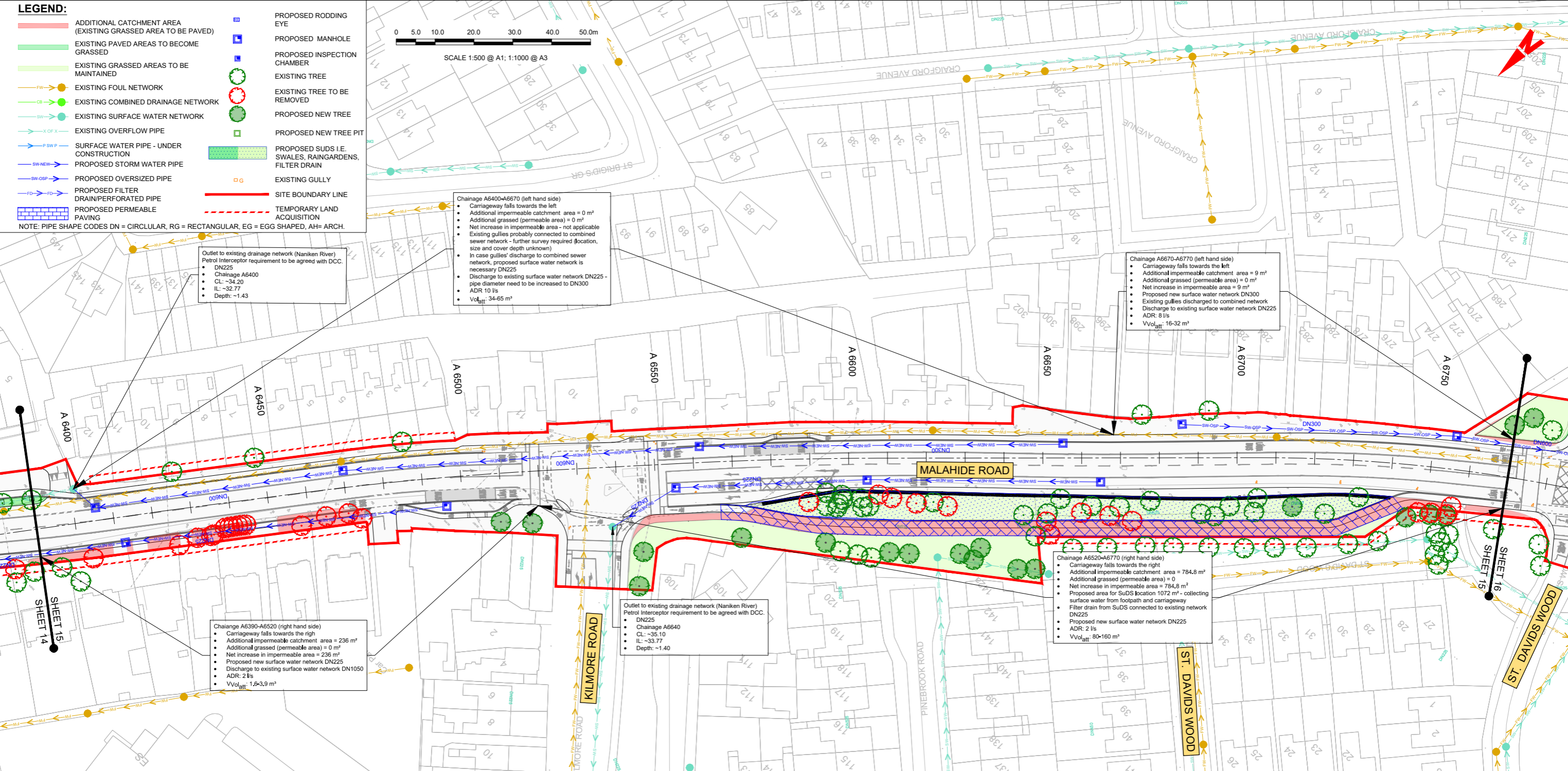
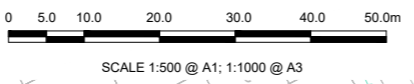
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LEGEND:

- 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

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Outlet to existing drainage network (Naniken River)
Petrol Interceptor requirement to be agreed with DCC.

- DN225
- Chainage A6400
- CL: -34.20
- IL: -32.77
- Depth: -1.43

Chainage A6400-A6670 (left hand side)

- Carriageway falls towards the 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 DN225
- Discharge to existing surface water network DN225 - pipe diameter need to be increased to DN300
- ADR 10 l/s
- VVol_{att}: 34-65 m³

Chainage A6670-A6770 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 9 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area = 9 m²
- Proposed new surface water network DN300
- Existing gullies discharged to combined network
- Discharge to existing surface water network DN225
- ADR: 8 l/s
- VVol_{att}: 16-32 m³

Chainage A6390-A6520 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 236 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area = 236 m²
- Proposed new surface water network DN225
- Discharge to existing surface water network DN1050
- ADR: 2 l/s
- VVol_{att}: 1.6-3.9 m³

Outlet to existing drainage network (Naniken River)
Petrol Interceptor requirement to be agreed with DCC.

- DN225
- Chainage A6640
- CL: -35.10
- IL: -33.77
- Depth: -1.40

Chainage A6520-A6770 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 784.8 m²
- Additional grassed (permeable area) = 0
- Net increase in impermeable area = 784.8 m²
- Proposed area for SuDS location 1072 m² - collecting surface water from footpath and carriageway
- Filter drain from SuDS connected to existing network DN225
- Proposed new surface water network DN225
- ADR: 2 l/s
- VVol_{att}: 80-160 m³

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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

Date: 06/12/21
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: P.POCZATKO
Checked: J.HAWE
Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0015	Sheet Number: 15 of 21	Status: A	Rev: M01

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

Chainage A6770-A6800 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 19 m²
- Additional grassed (permeable area) = 17 m²
- Net increase in impermeable area = 2 m²
- Proposed new surface water network - oversized pipe DN600
- Discharge to existing surface water network DN225
- ADR: 8 I/s
- VVol_{att}: 16-32 m³

Outlet to the existing network

- DN225
- Ch 6+800

Chainage A6800-A7145 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 608 m²
- Additional grassed (permeable area) = 96 m²
- Net increase in impermeable area = 512 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- ADR: not required
- VVol_{att}: not required

Chainage A6970-A7145 (right hand side)

- Carriageway fall toward the right
- Additional impermeable catchment area = 7 m²
- Additional grassed (permeable area) = 10 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 DN600
- Further survey required to confirm existing gullies's discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Chainage A6770-A6970 (Right hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 10 m²
- Additional grassed (permeable area) = 4 m²
- Net increase in impermeable area = 6 m²
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network DN225
- Existing surface water network out of scope - construction risk to cross the boundary
- Further survey required to confirm existing gullies's discharge location and existing road drainage system
- ADR: not required
- VVol_{att}: not required

Outlet to existing drainage network (River Tolka)

- Petrol Interceptor requirement to be agreed with DCC.
- DN225
- Chainage A6800
- CL: -34.22
- IL: -32.77
- Depth: -1.45

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		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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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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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**
Údaráis Náisiúnta Iompair
National Transport Authority

Engineering Designer: **AECOM** MOTT MACDONALD

Date: 06/12/21
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: P.POCZATKO
Checked: J.HAWE
Approved: C.ACTON

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0016	Sheet Number 16 of 21	Status A	Rev M01

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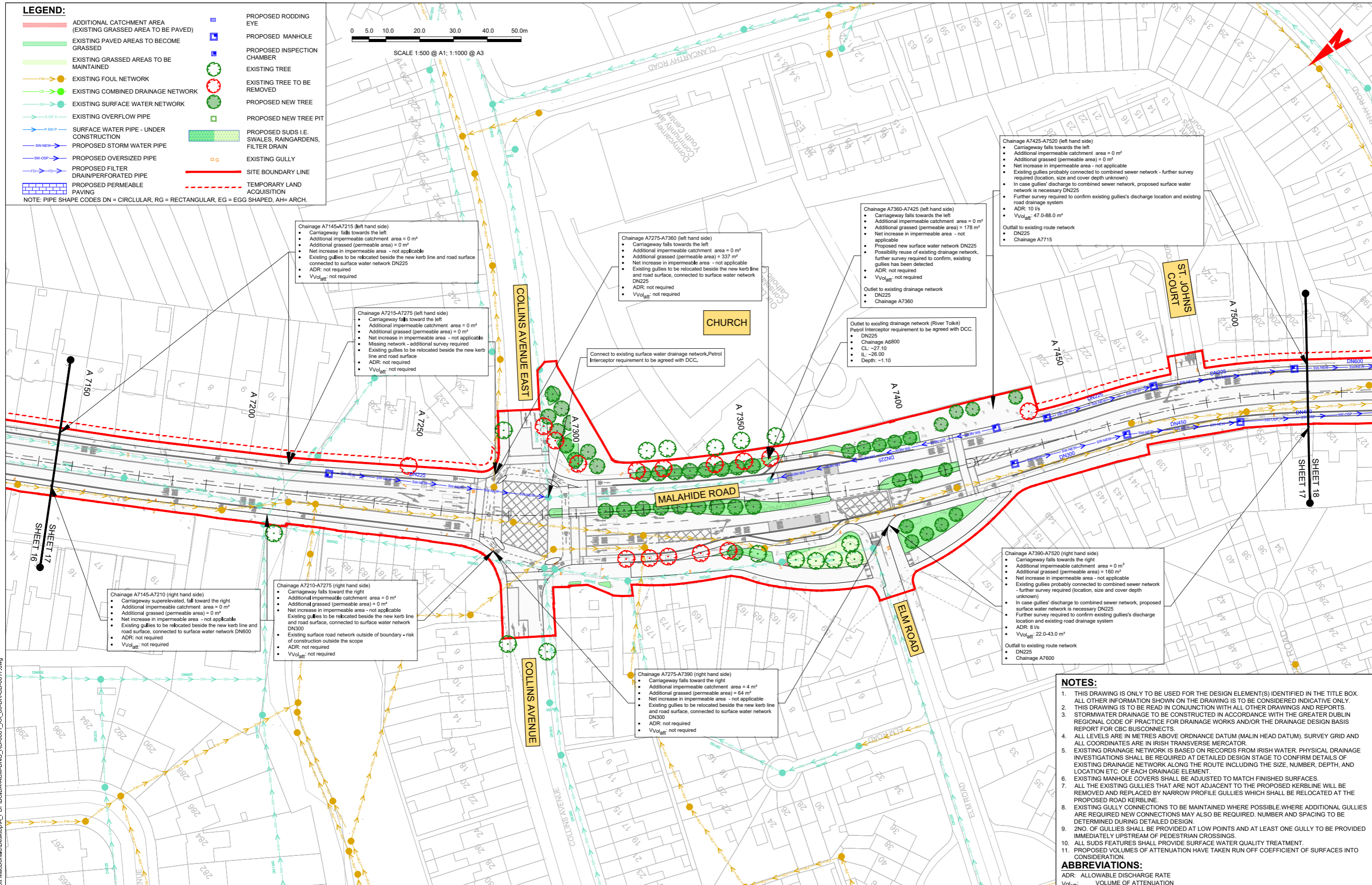
LEGEND:

- 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.



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



Chainage A7145-A7215 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 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
- ADR: not required
- VVol_{att}: not required

Chainage A7215-A7275 (left hand side)

- Carriageway falls toward the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Missing network - additional survey required
- Existing gullies to be relocated beside the new kerb line and road surface
- ADR: not required
- VVol_{att}: not required

Chainage A7275-A7360 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 337 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
- ADR: not required
- VVol_{att}: not required

Chainage A7360-A7425 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 178 m²
- Net increase in impermeable area - not applicable
- Proposed new surface water network DN225
- Possibility reuse of existing drainage network, further survey required to confirm, existing gullies has been detected
- ADR: not required
- VVol_{att}: not required

Chainage A7425-A7520 (left hand side)

- Carriageway falls towards the 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 DN225
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: 10 l/s
- VVol_{att}: 47.0-88.0 m³

Outfall to existing route network

- DN225
- Chainage A7715

Outlet to existing drainage network (River Tolka)

Petrol Interceptor requirement to be agreed with DCC.

- DN225
- Chainage A6800
- CL: -27.10
- IL: -26.00
- Depth: -1.10

Chainage A7145-A7210 (right hand side)

- Carriageway super-elevated, fall toward the right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 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 DN600
- ADR: not required
- VVol_{att}: not required

Chainage A7210-A7275 (right hand side)

- Carriageway falls toward the right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 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 DN300
- Existing surface road network outside of boundary - risk of construction outside the scope
- ADR: not required
- VVol_{att}: not required

Chainage A7275-A7390 (right hand side)

- Carriageway falls toward the right
- Additional impermeable catchment area = 4 m²
- Additional grassed (permeable area) = 64 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 DN300
- ADR: not required
- VVol_{att}: not required

Chainage A7390-A7520 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 160 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 DN225
- Further survey required to confirm existing gullies' discharge location and existing road drainage system
- ADR: 8 l/s
- VVol_{att}: 22.0-43.0 m³

Outfall to existing route network

- DN225
- Chainage A7600

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- EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
- 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.
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- ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
- PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

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Rev	Date	Drn	Chkd	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**

Date: 06/12/21 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA Originator Code: ACM

Drawn: P.POCZATKO Checked: J.H.AWE Approved: C.ACTON

QMS Code: QMS Code

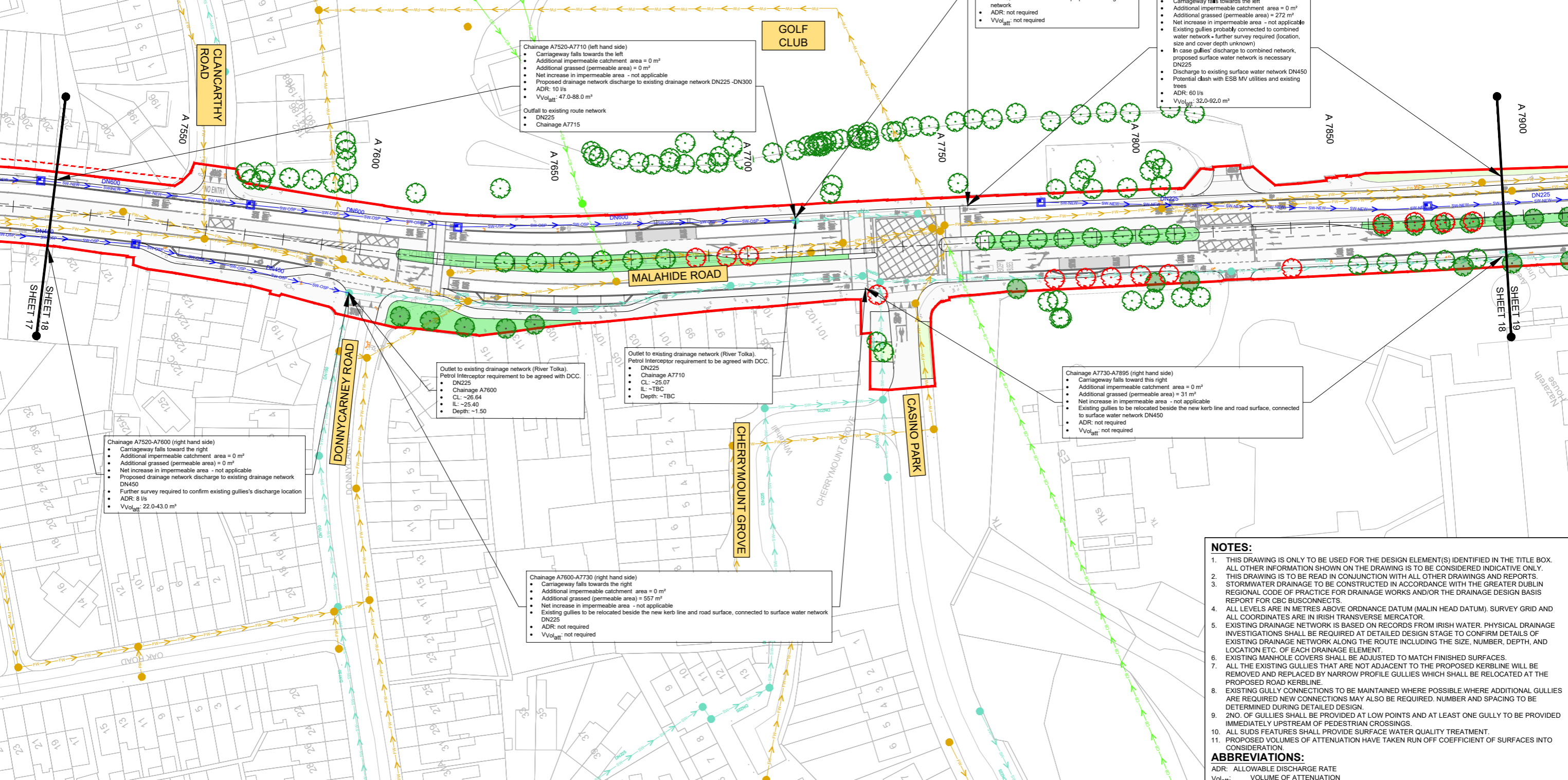
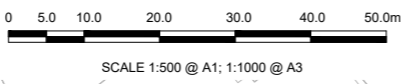
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0017	Sheet Number: 17 of 21	Status: A	Rev: M01

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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
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Chainage A7520-A7710 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Proposed drainage network discharge to existing drainage network DN225 - DN300
- ADR: 10 l/s
- VVol_{att}: 47.0-88.0 m³

Outfall to existing route network

- DN225
- Chainage A7715

Chainage A7710-A7755 (left hand side)

- Carriageway fall toward the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Existing gullies to be relocated beside the new kerb line and road surface, connected to combined network DN225, need to be connect to proposed drainage network
- ADR: not required
- VVol_{att}: not required

Chainage A7755-A7895 (left hand side)

- Carriageway falls towards the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 272 m²
- Net increase in impermeable area - not applicable
- Existing gullies probably connected to combined water network - further survey required (location, size and cover depth unknown)
- In case gullies' discharge to combined network, proposed surface water network is necessary DN225
- Discharge to existing surface water network DN450
- Potential clash with ESB MV utilities and existing trees
- ADR: 60 l/s
- VVol_{att}: 32.0-92.0 m³

Chainage A7730-A7895 (right hand side)

- Carriageway falls toward this right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 31 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 DN450
- ADR: not required
- VVol_{att}: not required

Chainage A7600-A7730 (right hand side)

- Carriageway falls towards the right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 557 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
- ADR: not required
- VVol_{att}: not required

Outlet to existing drainage network (River Tolka)

- Petrol Interceptor requirement to be agreed with DCC.
- DN225
- Chainage A7600
- CL: -26.64
- IL: -25.40
- Depth: -1.50

Outlet to existing drainage network (River Tolka)

- Petrol Interceptor requirement to be agreed with DCC.
- DN225
- Chainage A7710
- CL: -25.07
- IL: -TBC
- Depth: -TBC

Chainage A7520-A7600 (right hand side)

- Carriageway falls toward the right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Proposed drainage network discharge to existing drainage network DN450
- Further survey required to confirm existing gullies' discharge location
- ADR: 8 l/s
- VVol_{att}: 22.0-43.0 m³

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<p>Rev Date Dwn Chk'd App'd Description</p> <p>M01 06/12/21 PP JH CA ISSUE FOR PHASE 4: PLANNING</p>		<p>Client</p> <p>NTA Údarás Náisiúnta Iompair National Transport Authority</p>		<p>Engineering Designer</p> <p>AECOM MOTT MACDONALD</p>		<p>Programme Title</p> <p>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p>			
<p>Date</p> <p>06/12/21</p>		<p>Scale</p> <p>1:500 @ A1 1:1000 @ A3</p>		<p>Drawn</p> <p>P.POCZATKO</p>		<p>Checked</p> <p>J.HAWE</p>		<p>Approved</p> <p>C.ACTON</p>	
<p>Project Code</p> <p>BCIDA</p>		<p>Originator Code</p> <p>ACM</p>		<p>QMS Code</p>		<p>Drawing File Name</p> <p>BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0018</p>		<p>Sheet Number</p> <p>18 of 21</p>	
<p>Project Code</p> <p>BCIDA</p>		<p>Originator Code</p> <p>ACM</p>		<p>QMS Code</p>		<p>Status</p> <p>A</p>		<p>Rev</p> <p>M01</p>	

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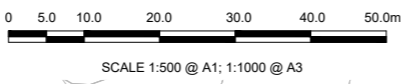
Clontarf Golf Club and Bowling Club

Nazareth House

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 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' 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
- VVol_{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)

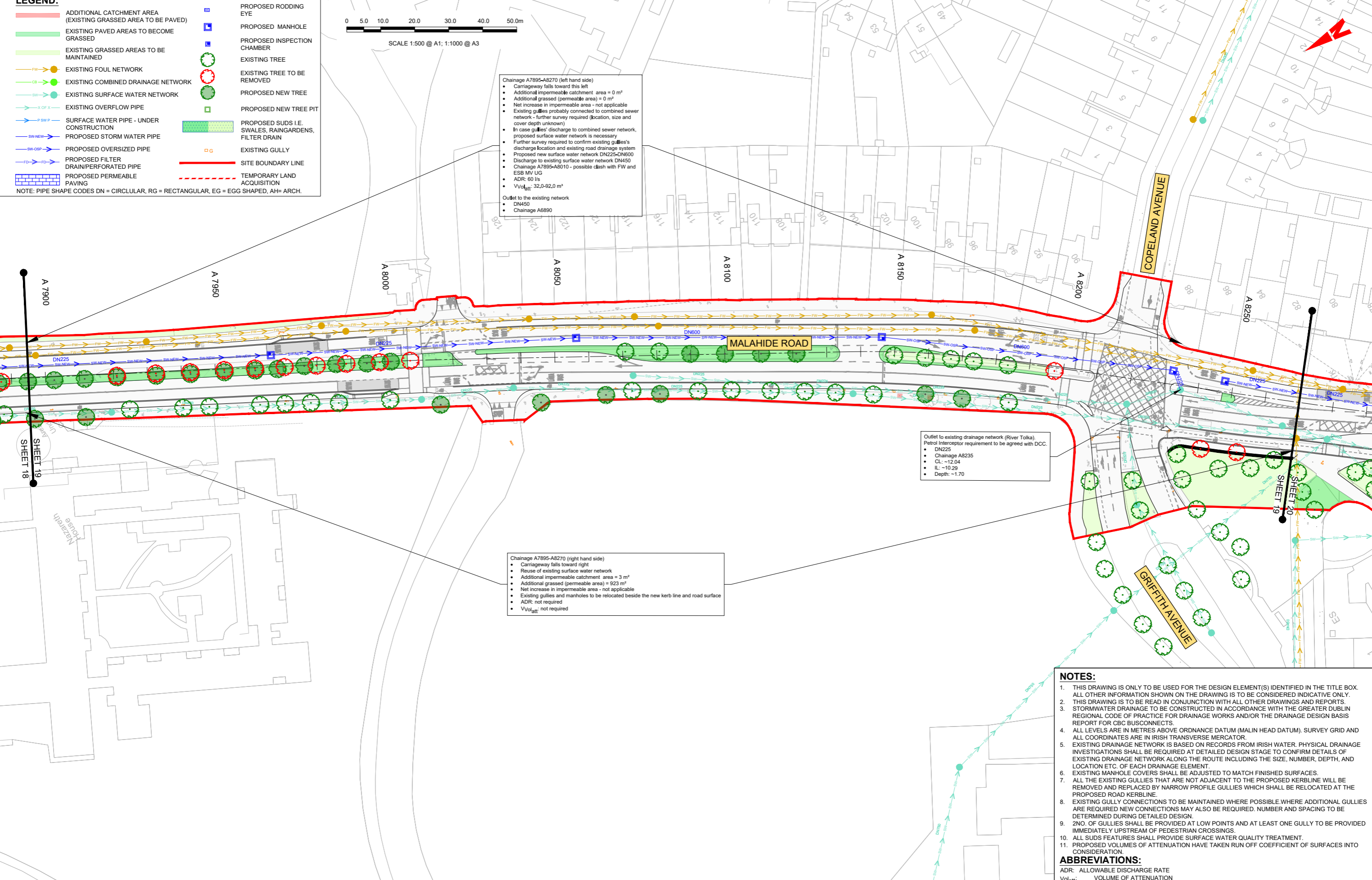
- Carriageway falls toward right
- Reuse of existing surface water network
- Additional impermeable catchment area = 3 m²
- Additional grassed (permeable area) = 923 m²
- Net increase in impermeable area - not applicable
- Existing gullies and manholes to be relocated beside the new kerb line and road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

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- 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.
- ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
- 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.
- EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
- 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.
- 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.
- 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
- ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
- PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

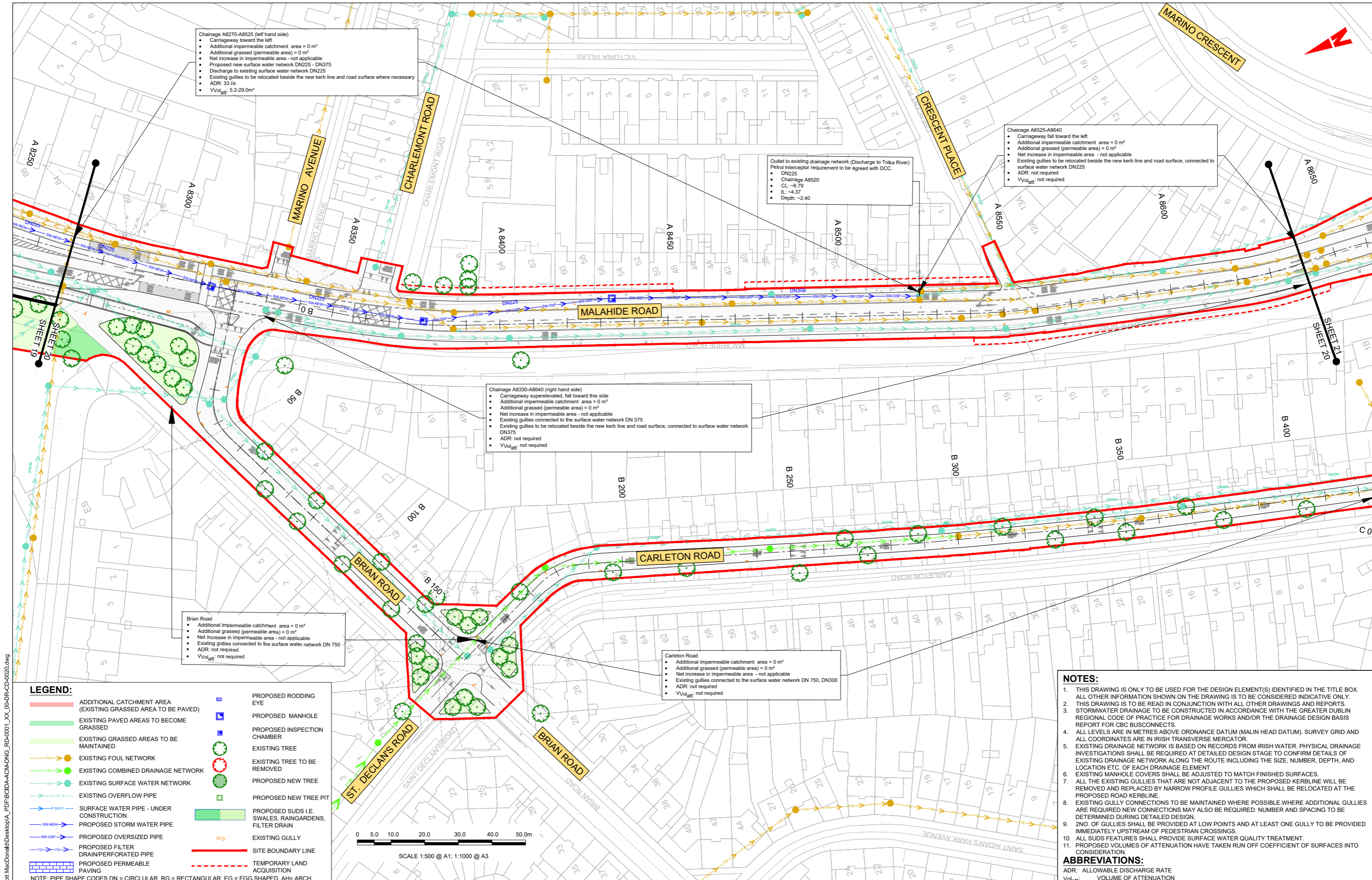
ABBREVIATIONS:

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



<p>Rev Date Dm Chk'd App'd Description</p> <p>M01 06/12/21 PP JH CA ISSUE FOR PHASE 4: PLANNING</p>		<p>Client</p> <p>NTA Údarás Náisiúnta Iompair National Transport Authority</p>		<p>Engineering Designer</p> <p>AECOM MOTT MACDONALD</p>		<p>Programme Title</p> <p>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p>	
<p>Date: 06/12/21 Scale: 1:500 @ A1, 1:1000 @ A3</p> <p>Project Code: BCIDA Originator Code: ACM</p>		<p>Drawn: P.POCZATKO Checked: J.HAWE Approved: C.ACTON</p>		<p>Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0019</p> <p>Sheet Number: 19 of 21</p> <p>Status: A</p> <p>Rev: M01</p>		<p>DO NOT SCALE USE FIGURED DIMENSIONS ONLY</p>	

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Chainage A8270-A8525 (left hand side)

- Carriageway toward the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Proposed new surface water network DN225 - DN375
- Discharge to existing surface water network DN225
- Existing gullies to be relocated beside the new kerb line and road surface where necessary
- ADR: 33 lbs
- VVol_{att}: 5.2-29.0m³

Chainage A8525-A8640

- Carriageway fall toward the left
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 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
- ADR: not required
- VVol_{att}: not required

Outlet to existing drainage network (Discharge to Tolka River)

- Petrol interceptor requirement to be agreed with DCC.
- DN225
- Chainage A8520
- CL: -6.79
- IL: -4.37
- Depth: -2.40

Chainage A8330-A8640 (right hand side)

- Carriageway super-elevated, fall toward this side
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Existing gullies connected to the surface water network DN 375
- Existing gullies to be relocated beside the new kerb line and road surface, connected to surface water network
- DN375
- ADR: not required
- VVol_{att}: not required

Brian Road

- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Existing gullies connected to the surface water network DN 750
- ADR: not required
- VVol_{att}: not required

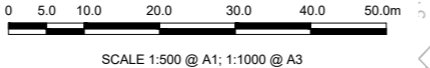
Carleton Road

- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 0 m²
- Net increase in impermeable area - not applicable
- Existing gullies connected to the surface water network DN 750, DN300
- ADR: not required
- VVol_{att}: not required

LEGEND:

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

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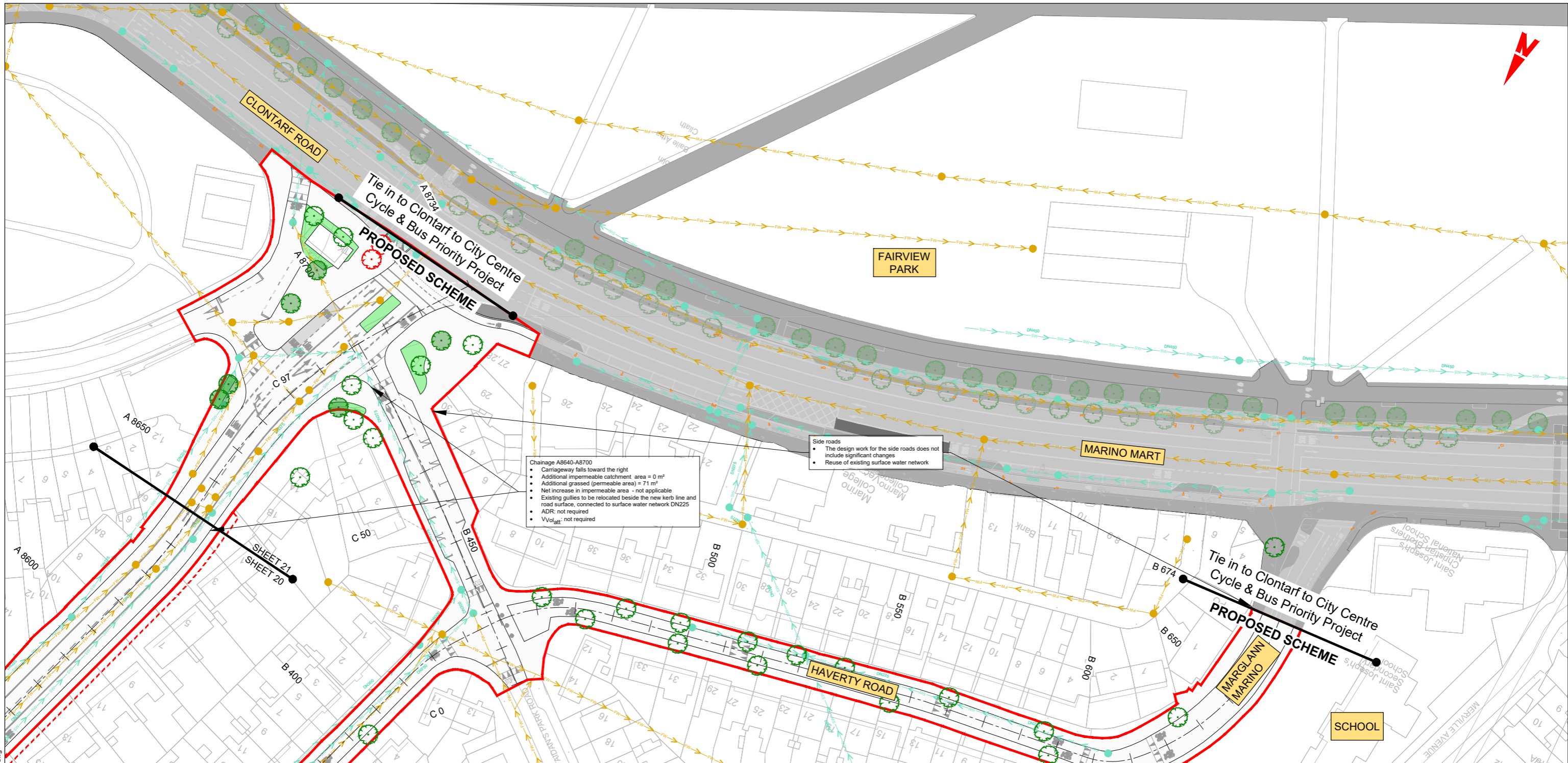
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11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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VVol_{att}: VOLUME OF ATTENUATION

<p>Project Ireland 2040 Building Ireland's Future</p>		<p>Rev M01 Date 06/12/21 Dm PP Chk'd JH App'd CA Description ISSUE FOR PHASE 4: PLANNING</p>	<p>Client NTA Údaráis Náisiúnta Iompair National Transport Authority</p>	<p>Engineering Designer AECOM MOTT MACDONALD</p>	<p>Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p>
<p>Date 06/12/21 Scale 1:500 @ A1 1:1000 @ A3 Project Code BCIDA Originator Code ACM</p>		<p>Drawn P.POCZATKO Checked J.HAWE Approved C.ACTON</p>		<p>Drawing Title CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>	
<p>Drawing File Name BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0020</p>		<p>Sheet Number 20 of 21</p>	<p>Status A</p>	<p>Rev M01</p>	<p>DO NOT SCALE USE FIGURED DIMENSIONS ONLY</p>



Chainage A8640-A8700

- Carriageway falls toward the right
- Additional impermeable catchment area = 0 m²
- Additional grassed (permeable area) = 71 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
- ADR: not required
- VVol_{att}: not required

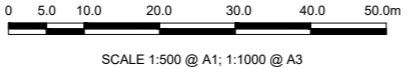
Side roads

- The design work for the side roads does not include significant changes
- Reuse of existing surface water network

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
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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		

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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**

Date: 06/12/21
Scale: 1:500 @ A1, 1:1000 @ A3
Project Code: BCIDA, Originator Code: ACM

Drawn: P.POCZATKO, Checked: J.H.AWE, Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: CLONGRIFFIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0001_XX_00-DR-CD-0021	Sheet Number: 21 of 21	Status: A	Rev: M01

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National Transport Authority

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Project Ireland 2040
Building Ireland's Future