

Proposed Surface Water
Drainage Works





BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

TALLAGHT/CLONDALKIN TO CITY CENTRE CORE BUS CORRIDOR SCHEME

PROPOSED SURFACE WATER DRAINAGE WORKS

DRAWING SERIES NUMBER(S)	DRAWING SERIES DESCRIPTION
BCIDA-ACM-DNG_IX-0809_XX_00-DR-CD-0001	TALLAGHT/CLONDALKIN TO CITY CENTRE. PROPOSED SURFACE WATER DRAINAGE WORKS. COVER SHEET
BCIDA-ACM-DNG_KP-0809_XX_00-DR-CD-0001	TALLAGHT/CLONDALKIN TO CITY CENTRE. PROPOSED SURFACE WATER DRAINAGE WORKS. KEY PLAN
BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0001 to 0056	TALLAGHT/CLONDALKIN TO CITY CENTRE. PROPOSED SURFACE WATER DRAINAGE WORKS
BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-1001 to 1004	TALLAGHT/CLONDALKIN TO CITY CENTRE. OVERALL CATCHMENT AREAS

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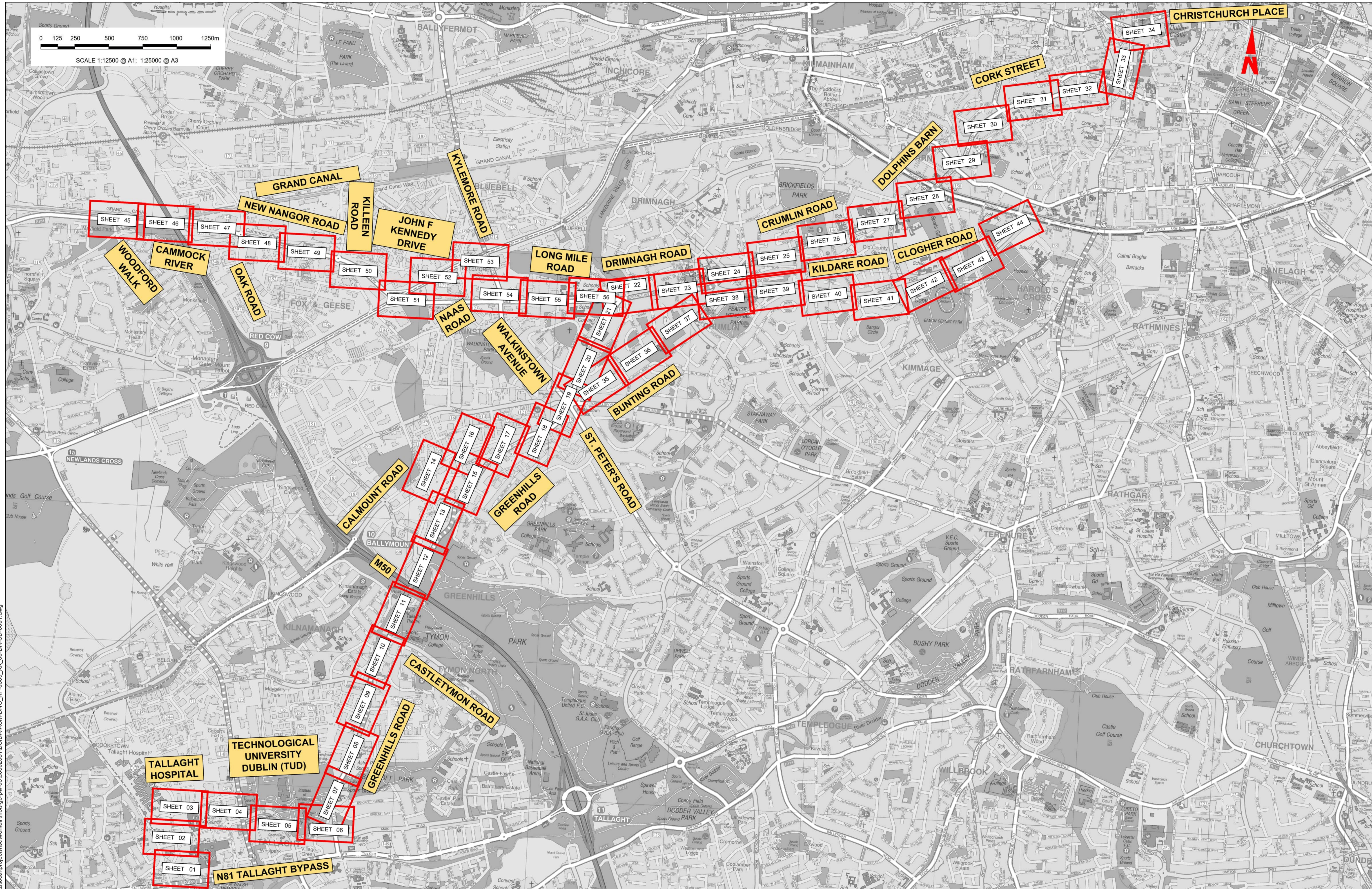
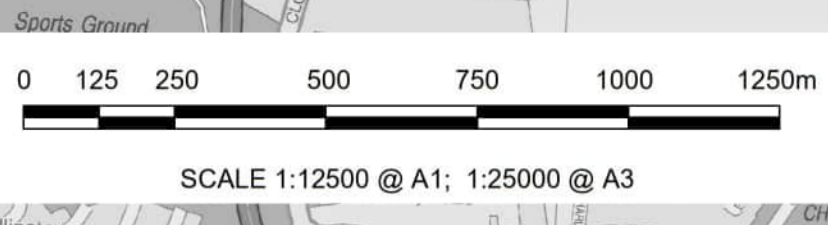


Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Date	28/03/23	Scale	N/A @ A1, N/A @ A3
Project Code	BCIDA	Originator Code	ACM
Engineering Designer	A.FLEMING	Checked	R.LOUGH
Approved	C.ACTON	QMS Code	

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS COVER SHEET			
Drawing File Name	BCIDA-ACM-DNG_IX-0809_XX_00-DR-CD-0001	Sheet Number	01 of 01
Status	A	Rev	M01

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
 Scale: 1:12500 @ A1, 1:25000 @ A3

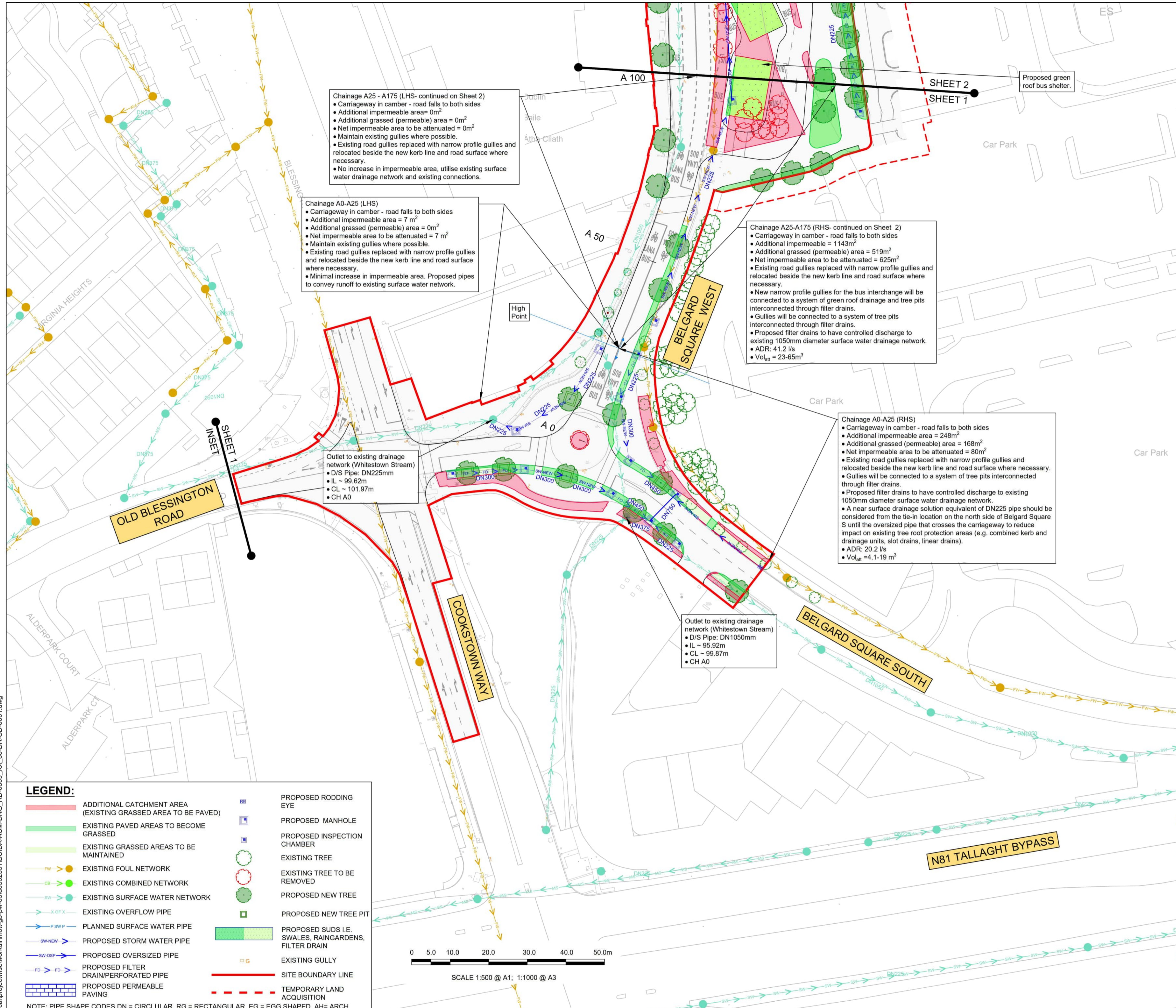
Project Code: BCIDA
 Originator Code: ACM

Drawn: A.FLEMING
 Checked: R.LOUGH
 Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS KEY PLAN			
Drawing File Name: BCIDA-ACM-DNG_KP-0809_XX_00-DR-CD-0001	Sheet Number: 01 of 01	Status: A	Rev: M01

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Chainage A25 - A175 (LHS - continued on Sheet 2)

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 0m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 0m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- No increase in impermeable area, utilise existing surface water drainage network and existing connections.

Chainage A0-A25 (LHS)

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 7 m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 7 m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Minimal increase in impermeable area. Proposed pipes to convey runoff to existing surface water network.

Chainage A25-A175 (RHS - continued on Sheet 2)

- Carriageway in camber - road falls to both sides
- Additional impermeable = 1143m²
- Additional grassed (permeable) area = 519m²
- Net impermeable area to be attenuated = 625m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New narrow profile gullies for the bus interchange will be connected to a system of green roof drainage and tree pits interconnected through filter drains.
- Gullies will be connected to a system of tree pits interconnected through filter drains.
- Proposed filter drains to have controlled discharge to existing 1050mm diameter surface water drainage network.
- ADR: 41.2 l/s
- Vol_{att} = 23-65m³

Chainage A0-A25 (RHS)

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 248m²
- Additional grassed (permeable) area = 168m²
- Net impermeable area to be attenuated = 80m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Gullies will be connected to a system of tree pits interconnected through filter drains.
- Proposed filter drains to have controlled discharge to existing 1050mm diameter surface water drainage network.
- A near surface drainage solution equivalent of DN225 pipe should be considered from the tie-in location on the north side of Belgard Square S until the oversized pipe that crosses the carriageway to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains).
- ADR: 20.2 l/s
- Vol_{att} = 4.1-19 m³

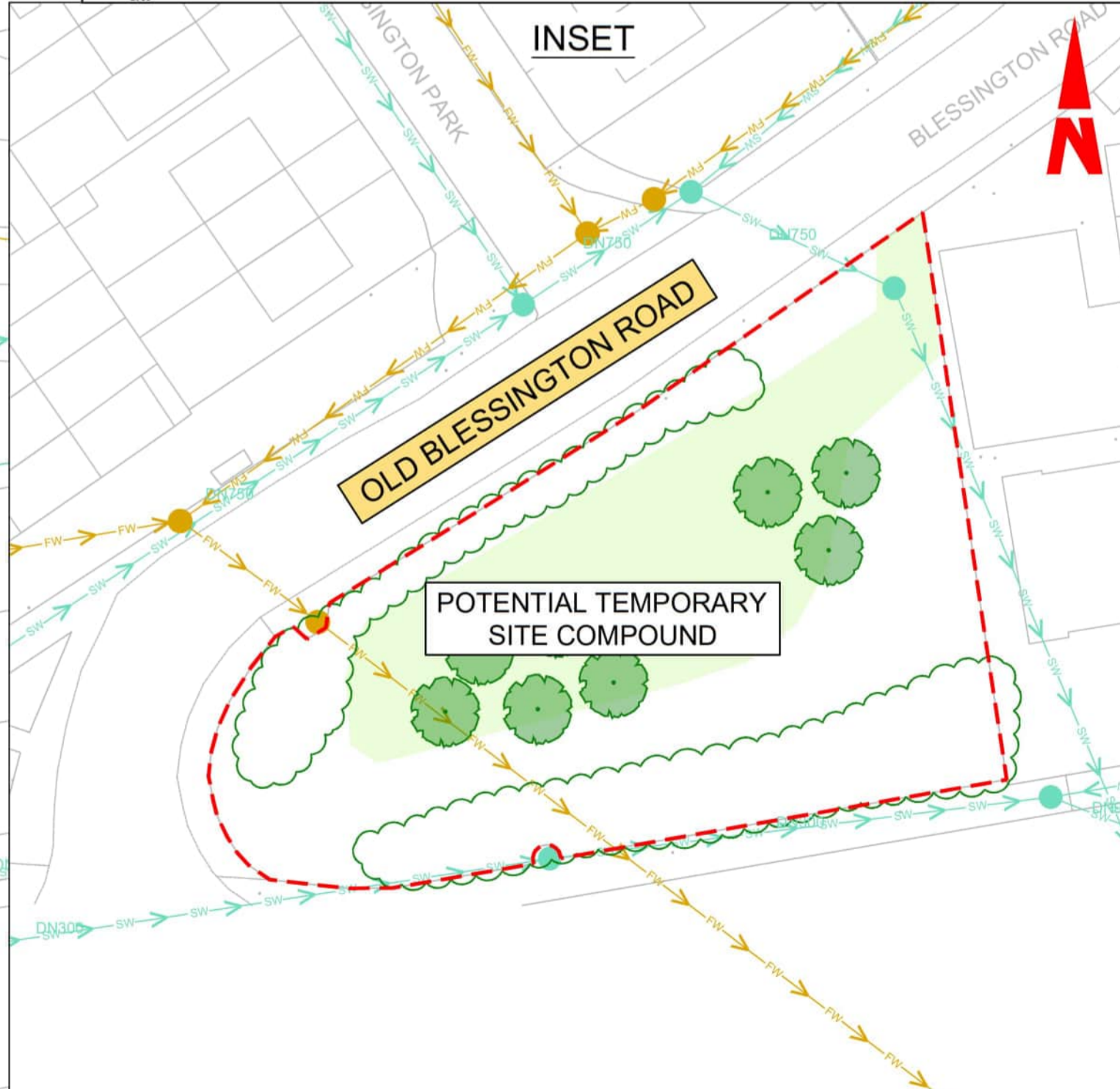
Outlet to existing drainage network (Whitestown Stream)

- D/S Pipe: DN225mm
- IL ~ 99.62m
- CL ~ 101.97m
- CH A0

Outlet to existing drainage network (Whitestown Stream)

- D/S Pipe: DN1050mm
- IL ~ 95.92m
- CL ~ 99.87m
- CH A0

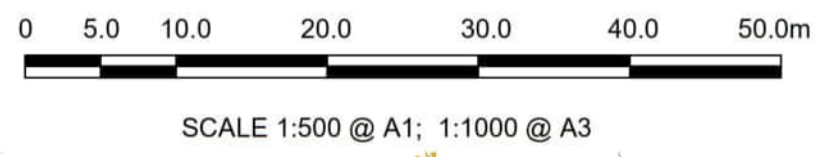
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 4. ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM), SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED 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



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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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 CODING DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.



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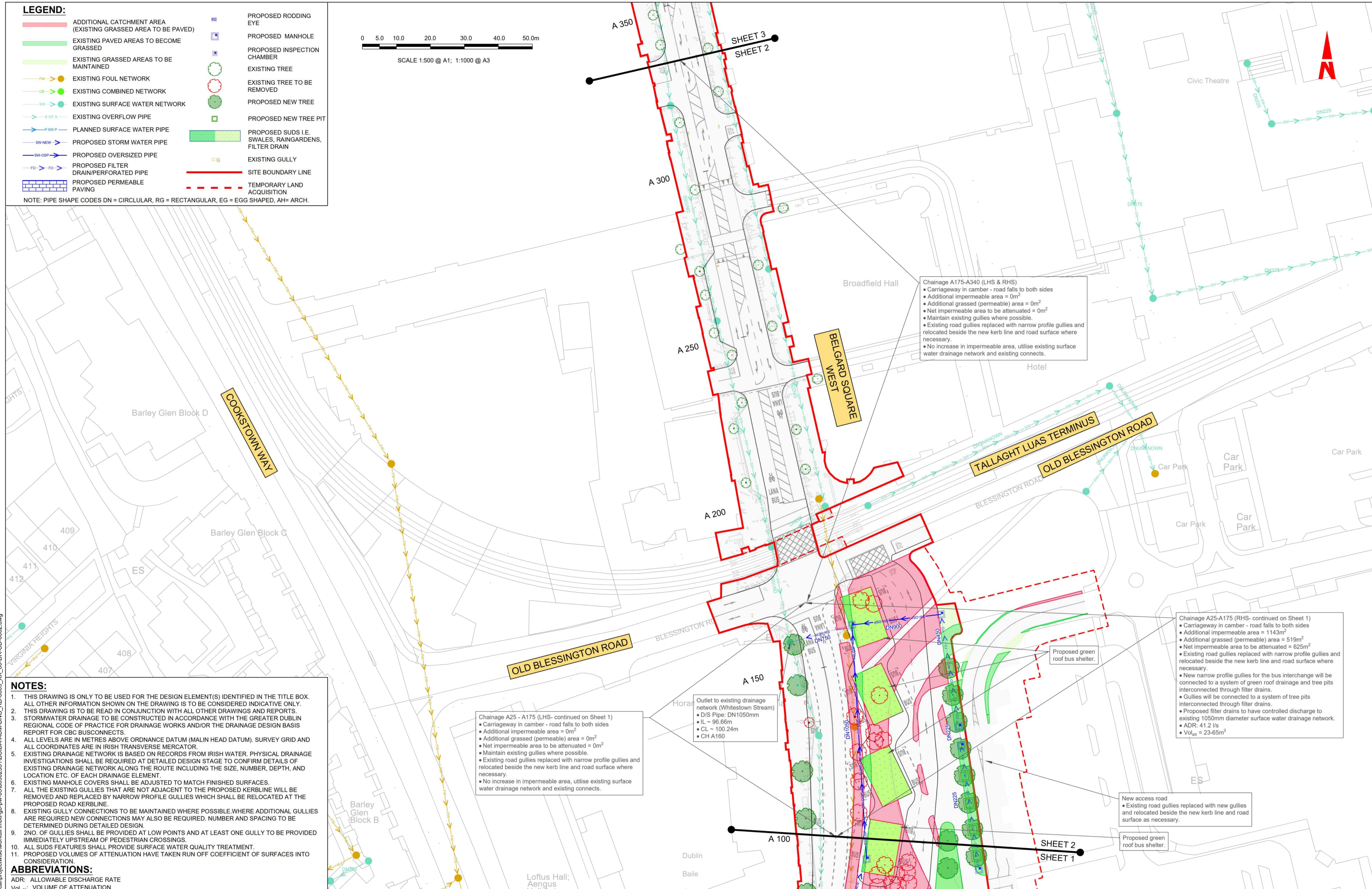
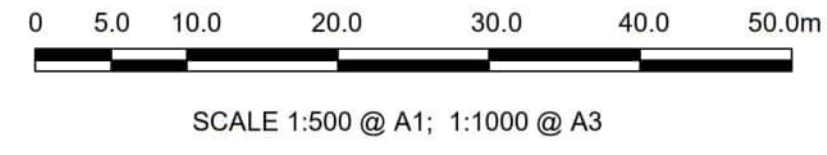
Project Code: BCIDA | Originator Code: ACM | QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0001	Sheet Number: 01 of 56	Status: A	Rev: M01

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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.



Chainage A175-A340 (LHS & RHS)

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 0m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 0m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- No increase in impermeable area, utilise existing surface water drainage network and existing connects.

Chainage A25 - A175 (LHS - continued on Sheet 1)

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 0m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 0m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- No increase in impermeable area, utilise existing surface water drainage network and existing connects.

Chainage A25-A175 (RHS - continued on Sheet 1)

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 1143m²
- Additional grassed (permeable) area = 519m²
- Net impermeable area to be attenuated = 625m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New narrow profile gullies for the bus interchange will be connected to a system of green roof drainage and tree pits interconnected through filter drains.
- Gullies will be connected to a system of tree pits interconnected through filter drains.
- Proposed filter drains to have controlled discharge to existing 1050mm diameter surface water drainage network.
- ADR: 41.2 I/s
- Vol_{att} = 23.65m³

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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.
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 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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Date: 28/03/23
Scale: 1:500 @ A1
1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
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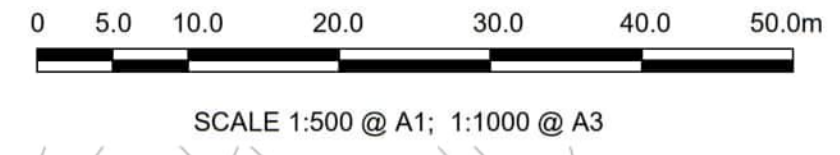
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Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0002	Sheet Number 02 of 56	Status A	Rev M01

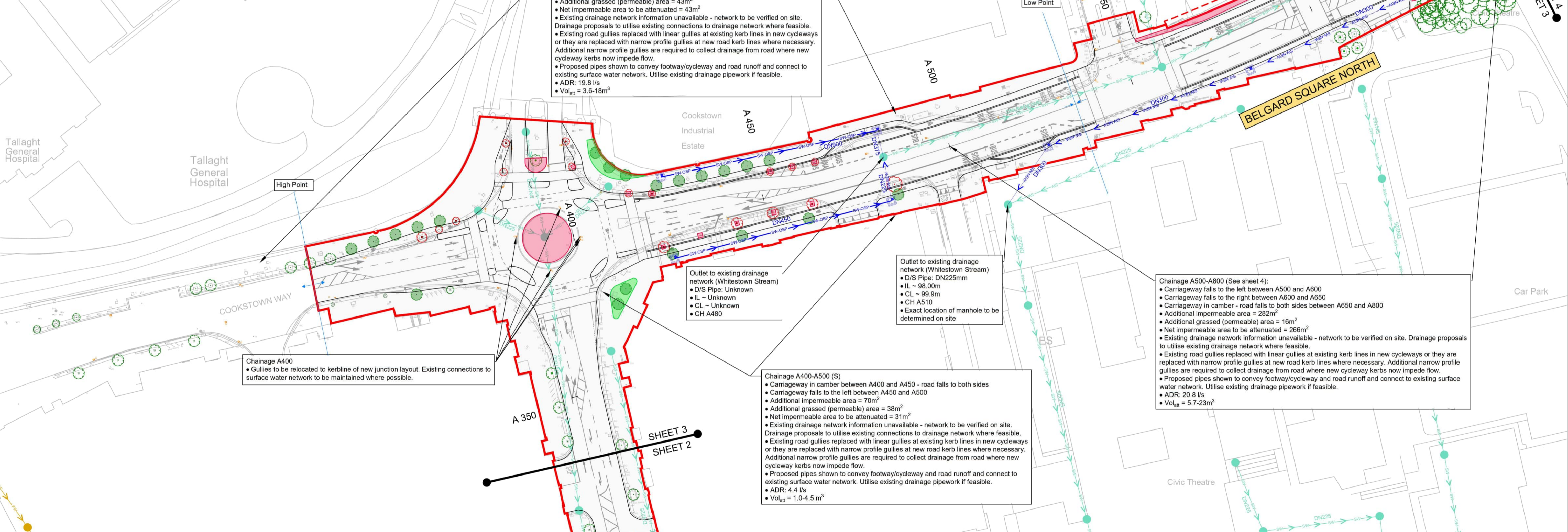
LEGEND:

- 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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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
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- PROPOSED NEW TREE
- PROPOSED NEW TREE PIT
- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
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- SITE BOUNDARY LINE
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- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION



HOSPITAL ENTRANCE

Chainage A400-A500 (N)

- Carriageway in camber between A400 and A450 - road falls to both sides
- Carriageway falls to the left between A450 and A500
- Additional impermeable area = 86m²
- Additional grassed (permeable) area = 43m²
- Net impermeable area to be attenuated = 43m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where feasible.
- Existing road gullies replaced with linear gullies at existing kerb lines in new cycleways or they are replaced with narrow profile gullies at new road kerb lines where necessary. Additional narrow profile gullies are required to collect drainage from road where new cycleway kerbs now impede flow.
- Proposed pipes shown to convey footway/cycleway and road runoff and connect to existing surface water network. Utilise existing drainage pipework if feasible.
- ADR: 19.8 l/s
- Vol_{att} = 3.6-18m³

Chainage A400

- Gullies to be relocated to kerblines of new junction layout. Existing connections to surface water network to be maintained where possible.

Outlet to existing drainage network (Whitestown Stream)

- D/S Pipe: Unknown
- IL - Unknown
- CL - Unknown
- CH A480

Outlet to existing drainage network (Whitestown Stream)

- D/S Pipe: DN225mm
- IL - 98.00m
- CL - 99.9m
- CH A510
- Exact location of manhole to be determined on site

Chainage A400-A500 (S)

- Carriageway in camber between A400 and A450 - road falls to both sides
- Carriageway falls to the left between A450 and A500
- Additional impermeable area = 70m²
- Additional grassed (permeable) area = 38m²
- Net impermeable area to be attenuated = 31m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where feasible.
- Existing road gullies replaced with linear gullies at existing kerb lines in new cycleways or they are replaced with narrow profile gullies at new road kerb lines where necessary. Additional narrow profile gullies are required to collect drainage from road where new cycleway kerbs now impede flow.
- Proposed pipes shown to convey footway/cycleway and road runoff and connect to existing surface water network. Utilise existing drainage pipework if feasible.
- ADR: 4.4 l/s
- Vol_{att} = 1.0-4.5 m³

Chainage A500-A800 (See sheet 4):

- Carriageway falls to the left between A500 and A600
- Carriageway falls to the right between A600 and A650
- Carriageway in camber - road falls to both sides between A650 and A800
- Additional impermeable area = 282m²
- Additional grassed (permeable) area = 16m²
- Net impermeable area to be attenuated = 266m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with linear gullies at existing kerb lines in new cycleways or they are replaced with narrow profile gullies at new road kerb lines where necessary. Additional narrow profile gullies are required to collect drainage from road where new cycleway kerbs now impede flow.
- Proposed pipes shown to convey footway/cycleway and road runoff and connect to existing surface water network. Utilise existing drainage pipework if feasible.
- ADR: 20.8 l/s
- Vol_{att} = 5.7-23m³

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client
NTA
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer
AECOM
MOTT MACDONALD

Date
28/03/23

Scale
1:500 @ A1
1:1000 @ A3

Drawn
A.FLEMING

Checked
R.LOUGH

Approved
C.ACTON

Project Code
BCIDA

Originator Code
ACM

QMS Code

Programme Title
BUSCONNECTS DUBLIN
CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title
TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME
PROPOSED SURFACE WATER DRAINAGE WORKS

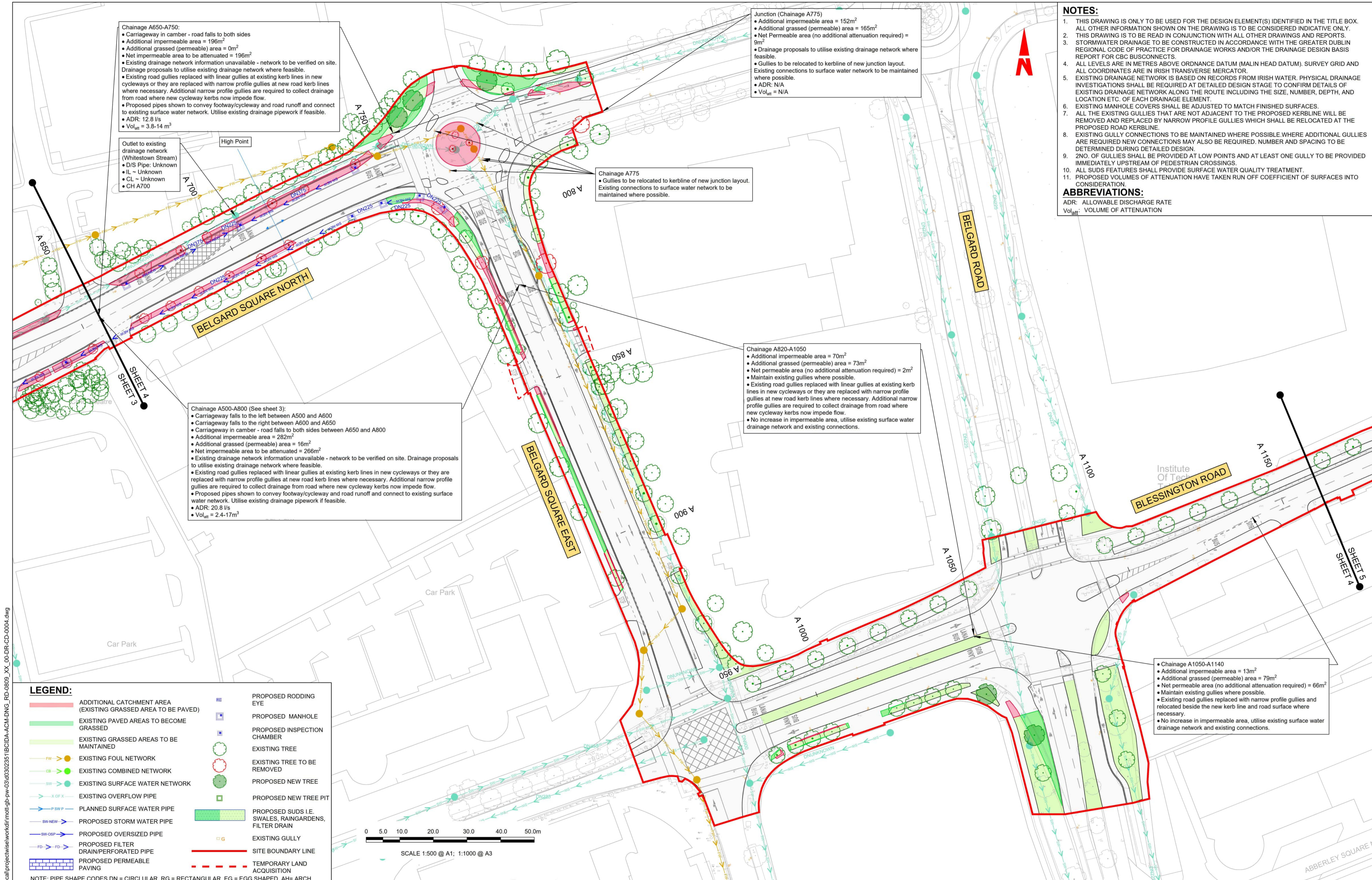
Drawing File Name
BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0003

Sheet Number
03 of 56

Status
A

Rev
M01

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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.
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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

Chainage A650-A750:

- Carriageway in camber - road falls to both sides
- Additional impermeable area = 196m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 196m²
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with linear gullies at existing kerb lines in new cycleways or they are replaced with narrow profile gullies at new road kerb lines where necessary. Additional narrow profile gullies are required to collect drainage from road where new cycleway kerbs now impede flow.
- Proposed pipes shown to convey footway/cycleway and road runoff and connect to existing surface water network. Utilise existing drainage pipework if feasible.
- ADR: 12.8 l/s
- Vol_{att} = 3.8-14 m³

Junction (Chainage A775)

- Additional impermeable area = 152m²
- Additional grassed (permeable) area = 165m²
- Net Permeable area (no additional attenuation required) = 9m²
- Drainage proposals to utilise existing drainage network where feasible.
- Gullies to be relocated to kerblines of new junction layout.
- Existing connections to surface water network to be maintained where possible.
- ADR: N/A
- Vol_{att} = N/A

Chainage A775

- Gullies to be relocated to kerblines of new junction layout.
- Existing connections to surface water network to be maintained where possible.

Chainage A820-A1050

- Additional impermeable area = 70m²
- Additional grassed (permeable) area = 73m²
- Net permeable area (no additional attenuation required) = 2m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with linear gullies at existing kerb lines in new cycleways or they are replaced with narrow profile gullies at new road kerb lines where necessary. Additional narrow profile gullies are required to collect drainage from road where new cycleway kerbs now impede flow.
- No increase in impermeable area, utilise existing surface water drainage network and existing connections.

Chainage A500-A800 (See sheet 3):

- Carriageway falls to the left between A500 and A600
- Carriageway falls to the right between A600 and A650
- Carriageway in camber - road falls to both sides between A650 and A800
- Additional impermeable area = 282m²
- Additional grassed (permeable) area = 16m²
- Net impermeable area to be attenuated = 266m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with linear gullies at existing kerb lines in new cycleways or they are replaced with narrow profile gullies at new road kerb lines where necessary. Additional narrow profile gullies are required to collect drainage from road where new cycleway kerbs now impede flow.
- Proposed pipes shown to convey footway/cycleway and road runoff and connect to existing surface water network. Utilise existing drainage pipework if feasible.
- ADR: 20.8 l/s
- Vol_{att} = 2.4-17m³

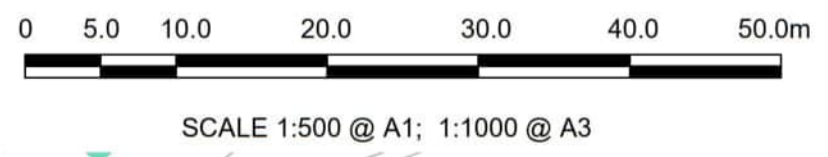
Chainage A1050-A1140

- Additional impermeable area = 13m²
- Additional grassed (permeable) area = 79m²
- Net permeable area (no additional attenuation required) = 66m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- No increase in impermeable area, utilise existing surface water drainage network and existing connections.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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.

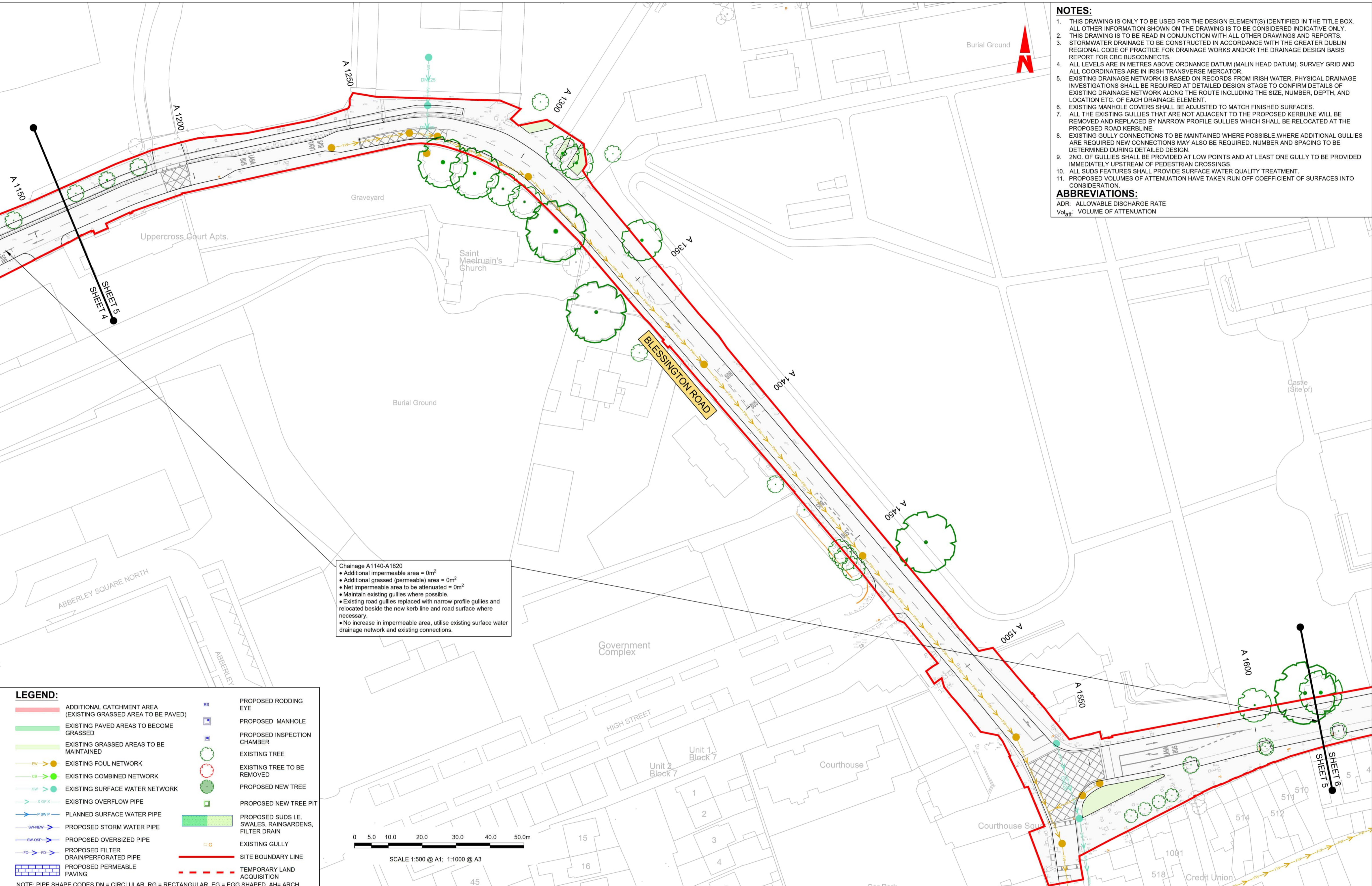


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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Project Code BCIDA Originator Code ACM QMS Code</p>		<p>Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0004 Sheet Number 04 of 56 Status A Rev M01</p>	

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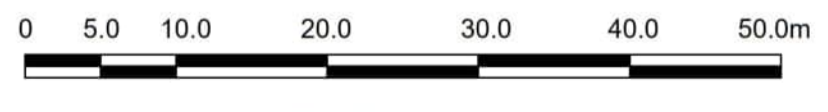
Chainage A1140-A1620

- Additional impermeable area = 0m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 0m²
- Maintain existing gullies where possible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- No increase in impermeable area, utilise existing surface water drainage network and existing connections.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

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

Drawing Title: **TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS**

Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0005

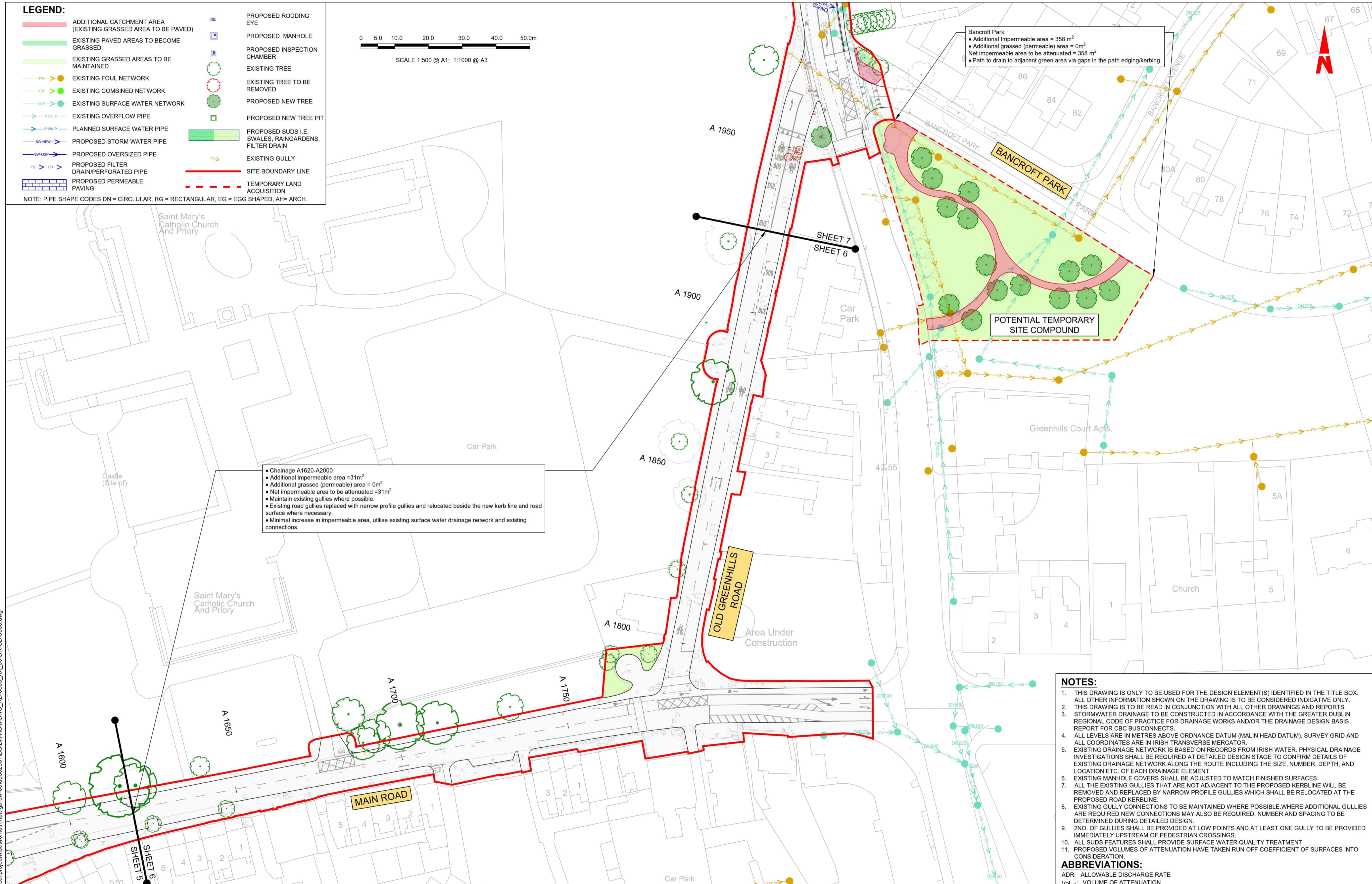
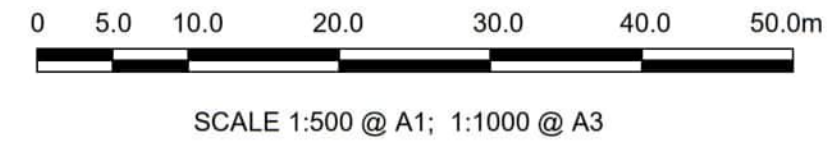
Sheet Number: 05 of 56
Status: A
Rev: M01

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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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
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	PROPOSED PERMEABLE PAVING		

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



• Chainage A1620-A2000
 • Additional impermeable area = 31m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 31m²
 • Maintain existing gullies where possible.
 • Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
 • Minimal increase in impermeable area, utilise existing surface water drainage network and existing connections.

Bancroft Park
 • Additional Impermeable area = 358 m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 358 m²
 • Path to drain to adjacent green area via gaps in the path edging/kerbing.

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 - 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **AECOM** MOTT MACDONALD

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA Originator Code: ACM

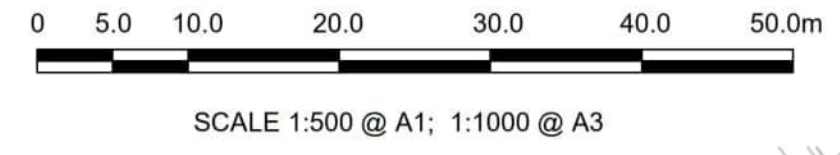
Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0006	Sheet Number: 06 of 56	Status: A	Rev: M01

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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.



TECHNOLOGICAL UNIVERSITY DUBLIN



Chainage A2000-A2100

- Carriageway falls to the right.
- No changes to impermeable area.
- Existing drainage network to be maintained.
- Existing gullies to be maintained where feasible, otherwise to be replaced with narrow profile gullies and realigned with new kerb line where required. New linear gullies to collect runoff from footway and cycleway.
- Proposed pipes to convey footway and cycleway runoff on the west side of the road and connect to existing surface water network.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A2020 to A2080 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.

Outlet to existing drainage network (River Poddle)

- D/S Pipe: Unknown
- IL ~ 86.07
- CL ~ 88.95
- CH A2000

Bancroft Park

- Additional Impermeable area = 358 m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 358 m²
- Path to drain to adjacent green area via gaps in the path edging/kerbing.

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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.
 - 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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Engineering Designer: **AECOM** MOTT MACDONALD

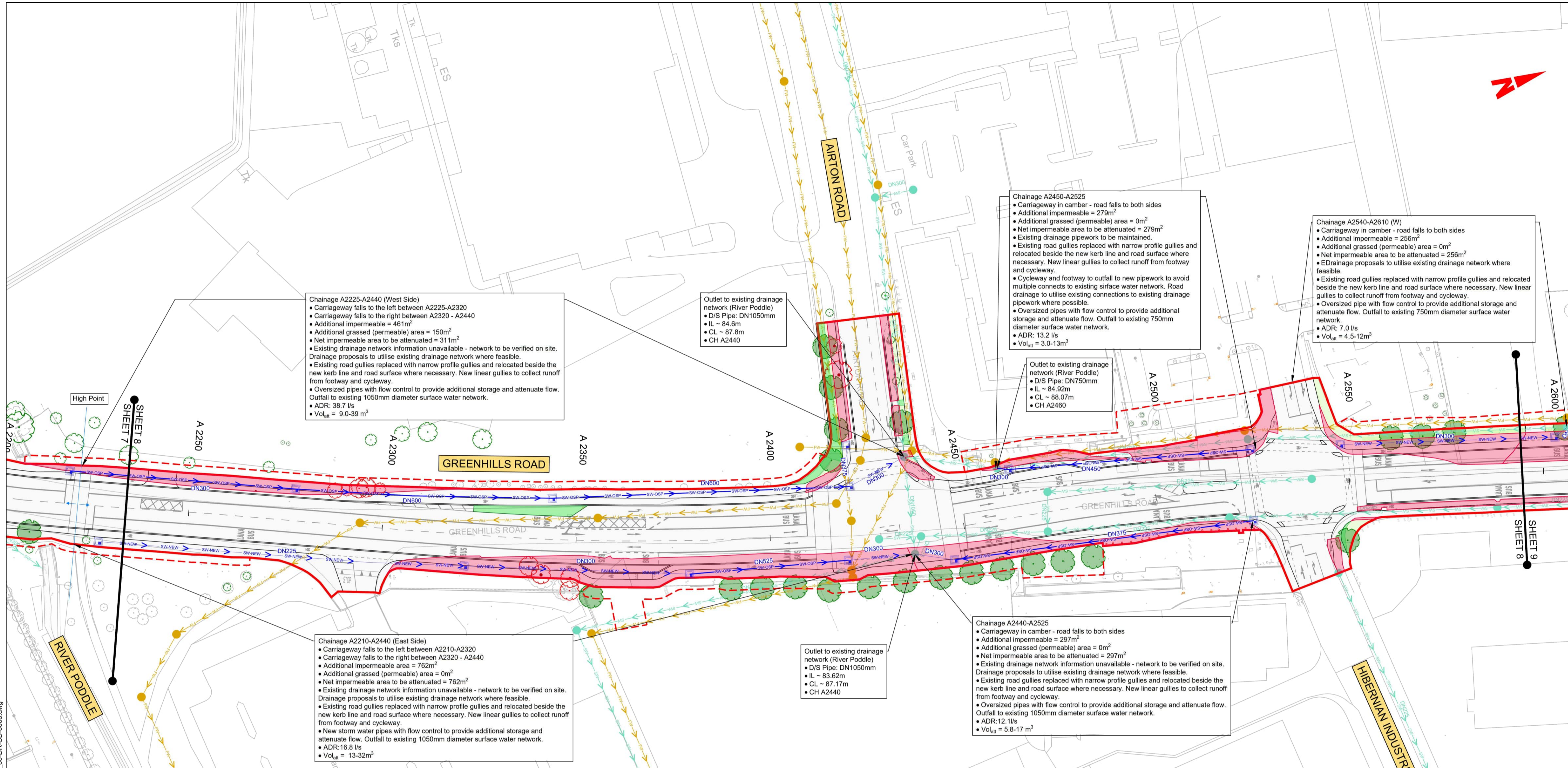
Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA Originator Code: ACM

Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0007	Sheet Number: 07 of 56	Status: A	Rev: M01

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Chainage A2225-A2440 (West Side)

- Carriageway falls to the left between A2225-A2320
- Carriageway falls to the right between A2320 - A2440
- Additional impermeable = 461m²
- Additional grassed (permeable) area = 150m²
- Net impermeable area to be attenuated = 311m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- Oversized pipes with flow control to provide additional storage and attenuate flow. Outfall to existing 1050mm diameter surface water network.
- ADR: 38.7 l/s
- Vol_{att} = 9.0-39 m³

Outlet to existing drainage network (River Puddle)

- D/S Pipe: DN1050mm
- IL ~ 84.6m
- CL ~ 87.8m
- CH A2440

Chainage A2450-A2525

- Carriageway in camber - road falls to both sides
- Additional impermeable = 279m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 279m²
- Existing drainage pipework to be maintained.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- Cycleway and footway to outfall to new pipework to avoid multiple connects to existing surface water network. Road drainage to utilise existing connections to existing drainage pipework where possible.
- Oversized pipes with flow control to provide additional storage and attenuate flow. Outfall to existing 750mm diameter surface water network.
- ADR: 13.2 l/s
- Vol_{att} = 3.0-13m³

Chainage A2540-A2610 (W)

- Carriageway in camber - road falls to both sides
- Additional impermeable = 256m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 256m²
- Existing drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- Oversized pipe with flow control to provide additional storage and attenuate flow. Outfall to existing 750mm diameter surface water network.
- ADR: 7.0 l/s
- Vol_{att} = 4.5-12m³

Chainage A2210-A2440 (East Side)

- Carriageway falls to the left between A2210-A2320
- Carriageway falls to the right between A2320 - A2440
- Additional impermeable area = 762m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 762m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- New storm water pipes with flow control to provide additional storage and attenuate flow. Outfall to existing 1050mm diameter surface water network.
- ADR: 16.8 l/s
- Vol_{att} = 13-32m³

Outlet to existing drainage network (River Puddle)

- D/S Pipe: DN1050mm
- IL ~ 83.62m
- CL ~ 87.17m
- CH A2440

Chainage A2440-A2525

- Carriageway in camber - road falls to both sides
- Additional impermeable = 297m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 297m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- Oversized pipes with flow control to provide additional storage and attenuate flow. Outfall to existing 1050mm diameter surface water network.
- ADR: 12.1 l/s
- Vol_{att} = 5.8-17 m³

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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.
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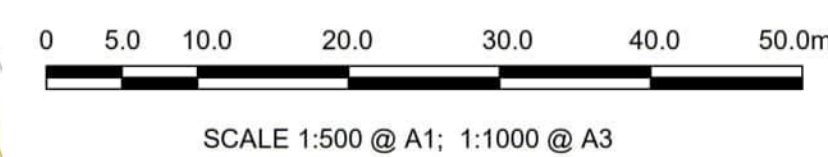
ABBREVIATIONS:

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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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Client: **NTA**
Údaráis Náisiúnta Iompair
National Transport Authority

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

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

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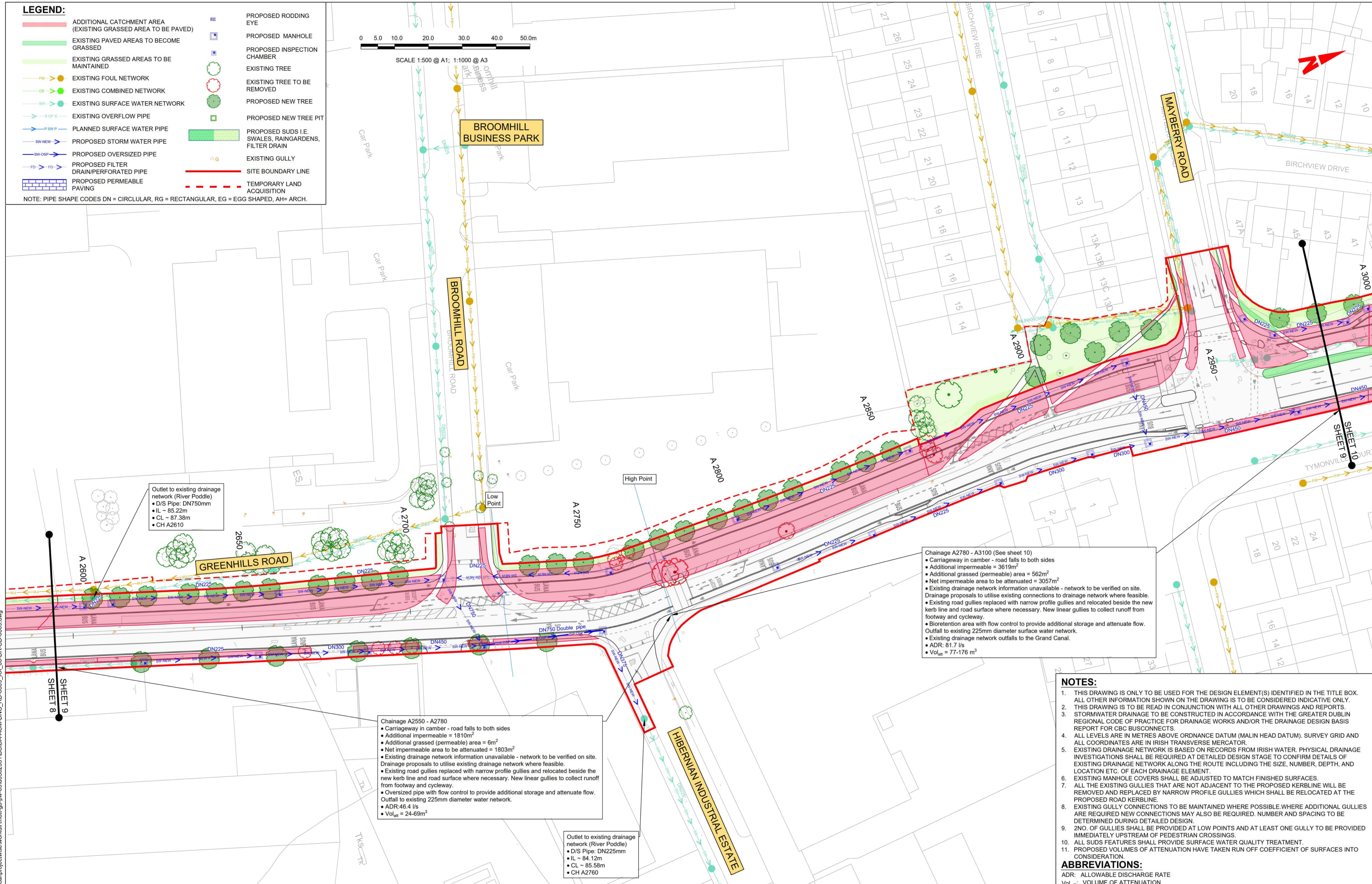
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
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Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0008	Sheet Number: 08 of 56	Status: A	Rev: M01

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LEGEND:

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Outlet to existing drainage network (River Poddle)

- D/S Pipe: DN750mm
- IL - 85.22m
- CL - 87.38m
- CH A2610

Chainage A2780 - A3100 (See sheet 10)

- Carriageway in camber - road falls to both sides
- Additional impermeable = 3619m²
- Additional grassed (permeable) area = 562m²
- Net impermeable area to be attenuated = 3057m²
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where feasible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- Bioretention area with flow control to provide additional storage and attenuate flow.
- Outfall to existing 225mm diameter surface water network.
- Existing drainage network outfalls to the Grand Canal.
- ADR: 81.7 l/s
- Vol_{att} = 77-176 m³

Chainage A2550 - A2780

- Carriageway in camber - road falls to both sides
- Additional impermeable = 1810m²
- Additional grassed (permeable) area = 6m²
- Net impermeable area to be attenuated = 1803m²
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing drainage network where feasible.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. New linear gullies to collect runoff from footway and cycleway.
- Oversized pipe with flow control to provide additional storage and attenuate flow.
- Outfall to existing 225mm diameter water network.
- ADR: 46.4 l/s
- Vol_{att} = 24-69m³

Outlet to existing drainage network (River Poddle)

- D/S Pipe: DN225mm
- IL - 84.12m
- CL - 85.58m
- CH A2760

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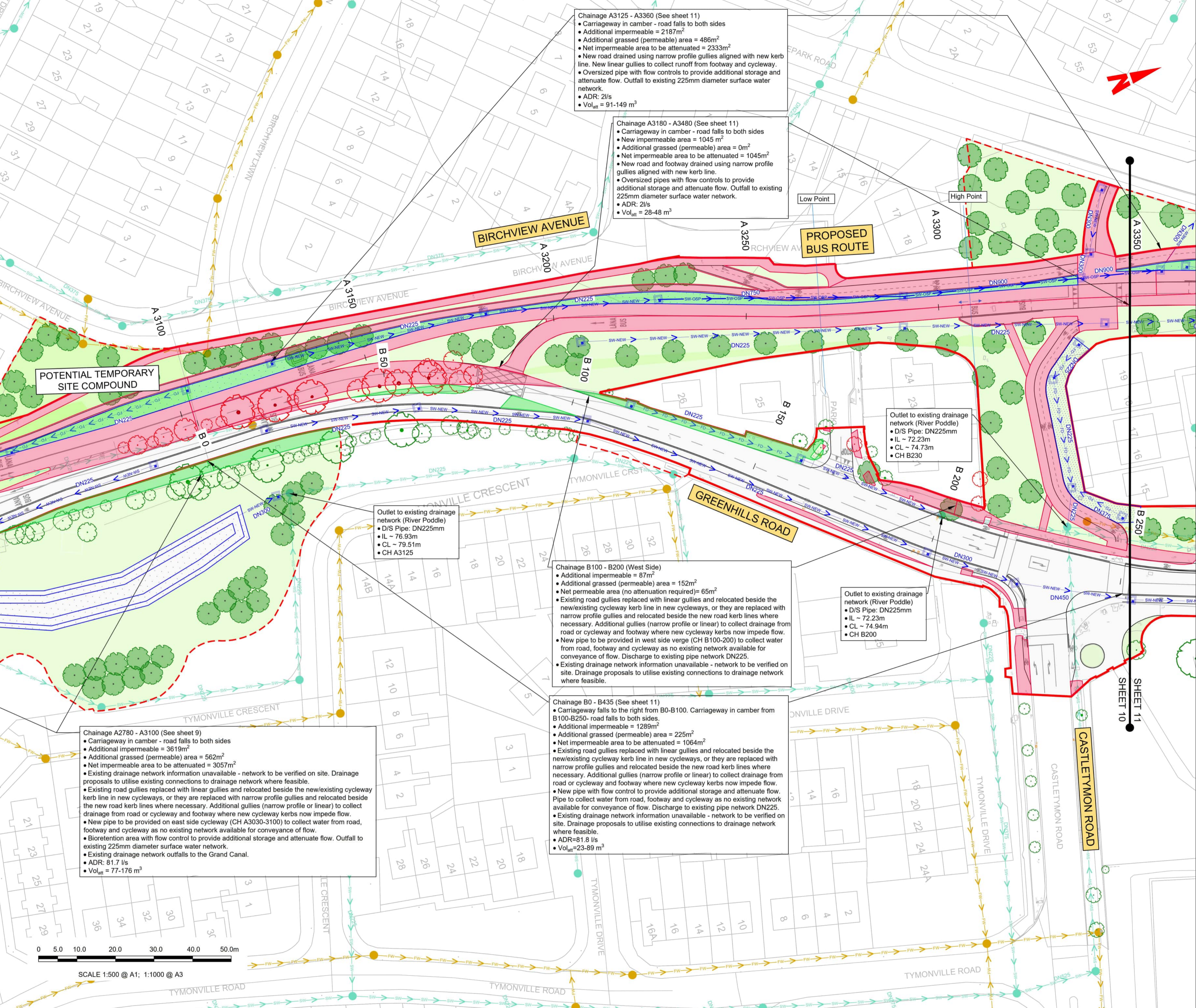
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Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0009	Sheet Number: 09 of 56	Status: A	Rev: M01

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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.



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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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Chainage A2780 - A3100 (See sheet 9)

- Carriageway in camber - road falls to both sides
- Additional impermeable = 3619m²
- Additional grassed (permeable) area = 562m²
- Net impermeable area to be attenuated = 3057m²
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where feasible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipe to be provided on east side cycleway (CH A3030-3100) to collect water from road, footway and cycleway as no existing network available for conveyance of flow.
- Bioretention area with flow control to provide additional storage and attenuate flow. Outfall to existing 225mm diameter surface water network.
- Existing drainage network outfalls to the Grand Canal.
- ADR: 81.7 l/s
- Vol_{att} = 77-176 m³

Chainage B100 - B200 (West Side)

- Additional impermeable = 87m²
- Additional grassed (permeable) area = 152m²
- Net permeable area (no attenuation required) = 65m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipe to be provided in west side verge (CH B100-200) to collect water from road, footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN225.
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where feasible.

Chainage B0 - B435 (See sheet 11)

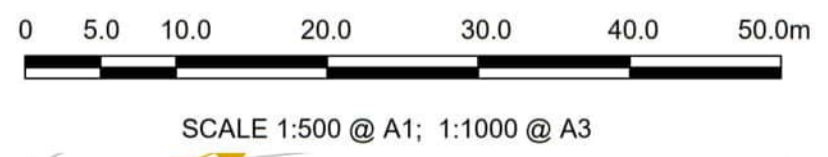
- Carriageway falls to the right from B0-B100. Carriageway in camber from B100-B250 - road falls to both sides.
- Additional impermeable = 1289m²
- Additional grassed (permeable) area = 225m²
- Net impermeable area to be attenuated = 1064m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipe with flow control to provide additional storage and attenuate flow. Pipe to collect water from road, footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN225.
- Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where feasible.
- ADR=81.8 l/s
- Vol_{att}=23-89 m³

Chainage A3125 - A3360 (See sheet 11)

- Carriageway in camber - road falls to both sides
- Additional impermeable = 2187m²
- Additional grassed (permeable) area = 486m²
- Net impermeable area to be attenuated = 2333m²
- New road drained using narrow profile gullies aligned with new kerb line. New linear gullies to collect runoff from footway and cycleway.
- Oversized pipe with flow controls to provide additional storage and attenuate flow. Outfall to existing 225mm diameter surface water network.
- ADR: 2l/s
- Vol_{att} = 91-149 m³

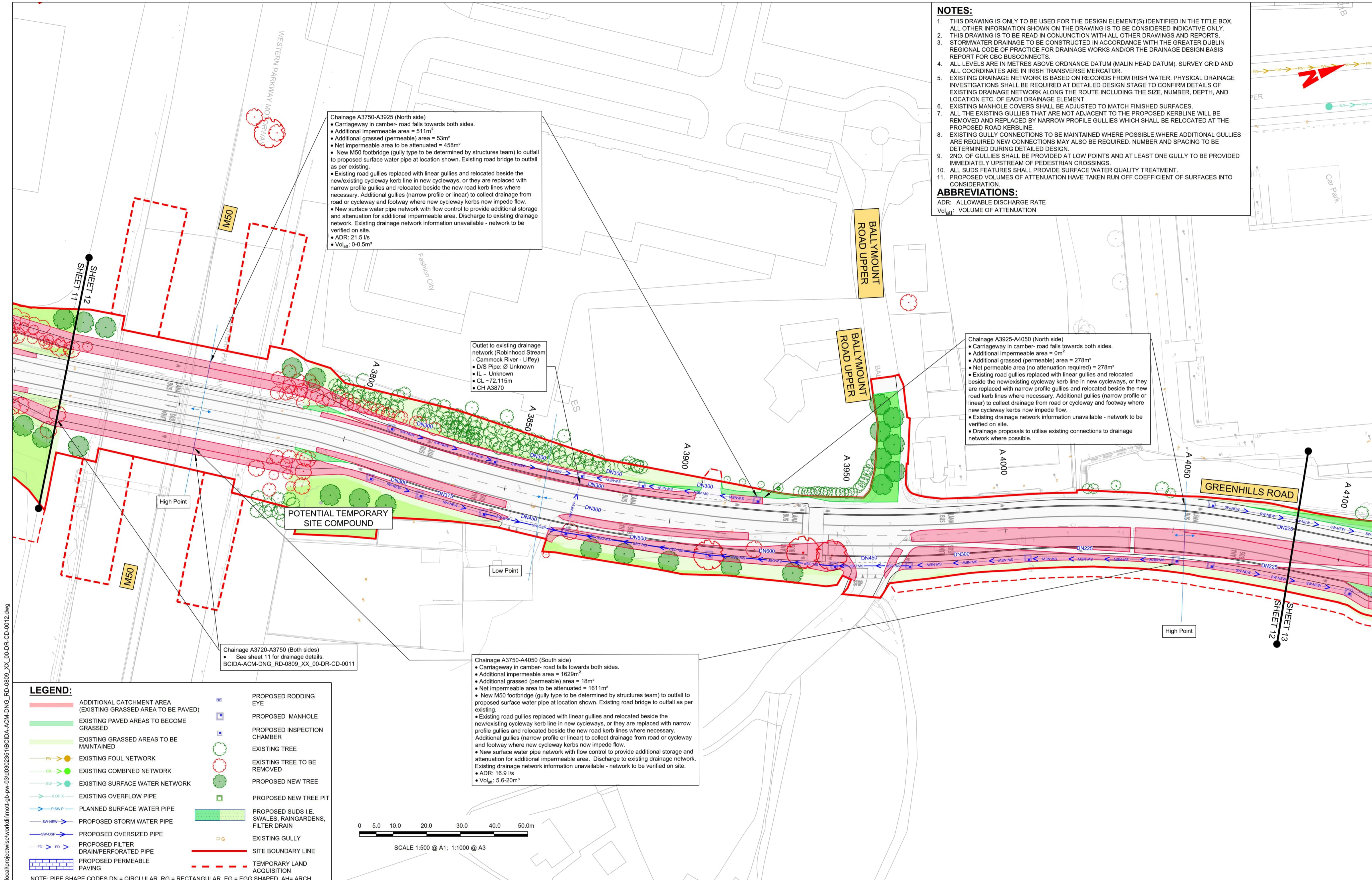
Chainage A3180 - A3480 (See sheet 11)

- Carriageway in camber - road falls to both sides
- New impermeable area = 1045 m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 1045m²
- New road and footway drained using narrow profile gullies aligned with new kerb line.
- Oversized pipes with flow controls to provide additional storage and attenuate flow. Outfall to existing 225mm diameter surface water network.
- ADR: 2l/s
- Vol_{att} = 28-48 m³



Rev	Date	Drn	Chk'd	App'd	Description	Client	Engineering Designer	Programme Title				
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING	NTA Údaráis Náisiúnta Iompair National Transport Authority	AECOM MOTT MACDONALD	BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS				
						Date: 28/03/23	Scale: 1:500 @ A1 1:1000 @ A3	Drawn: A.FLEMING	Checked: R.LOUGH	Approved: C.ACTON		
						Project Code: BCIDA	Originator Code: ACM	QMS Code:	Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0010	Sheet Number: 10 of 56	Status: A	Rev: M01

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

Chainage A3750-A3925 (North side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 511m²
- Additional grassed (permeable) area = 53m²
- Net impermeable area to be attenuated = 458m²
- New M50 footbridge (gully type to be determined by structures team) to outfall to proposed surface water pipe at location shown. Existing road bridge to outfall as per existing.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 21.5 l/s
- Vol_{att}: 0-0.5m³

Chainage A3925-A4050 (North side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 0m²
- Additional grassed (permeable) area = 278m²
- Net permeable area (no attenuation required) = 278m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where possible.

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL -72.115m
- CH A3870

Chainage A3720-A3750 (Both sides)

- See sheet 11 for drainage details.
- BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0011

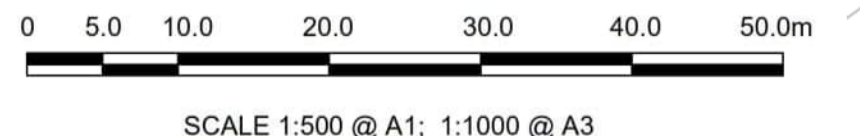
Chainage A3750-A4050 (South side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 1629m²
- Additional grassed (permeable) area = 18m²
- Net impermeable area to be attenuated = 1611m²
- New M50 footbridge (gully type to be determined by structures team) to outfall to proposed surface water pipe at location shown. Existing road bridge to outfall as per existing.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 16.9 l/s
- Vol_{att}: 5.6-20m³

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 NETWORK	EXISTING TREE TO BE REMOVED
EXISTING SURFACE WATER NETWORK	PROPOSED NEW TREE
EXISTING OVERFLOW PIPE	PROPOSED NEW TREE PIT
PLANNED SURFACE WATER PIPE	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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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Project Code BCIDA Originator Code ACM QMS Code</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0012</p>		<p>Sheet Number 12 of 56 Status A Rev M01</p>	

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

Chainage A4375-A4475 (North side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 236m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 236m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN1500. (Location shown on sheet 14)
- Potential tree pits interconnected through a series of filter drains
- ADR: 2.0 l/s
- Vol_{att}: 1.6-3.9m³

Chainage A4060-A4375 (North side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 2402m²
- Additional grassed (permeable) area = 277m²
- Net impermeable area to be attenuated = 2125m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN1500.
- Potential tree pits interconnected through a series of filter drains
- ADR: 15.0 l/s
- Vol_{att}: 14-32m³

Chainage A4060-A4500 (South side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 3902m²
- Additional grassed (permeable) area = 390m²
- Net impermeable area to be attenuated = 3512m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN1350. (Location shown on sheet 14)
- ADR: 23.0 l/s
- Vol_{att}: 26-56m³

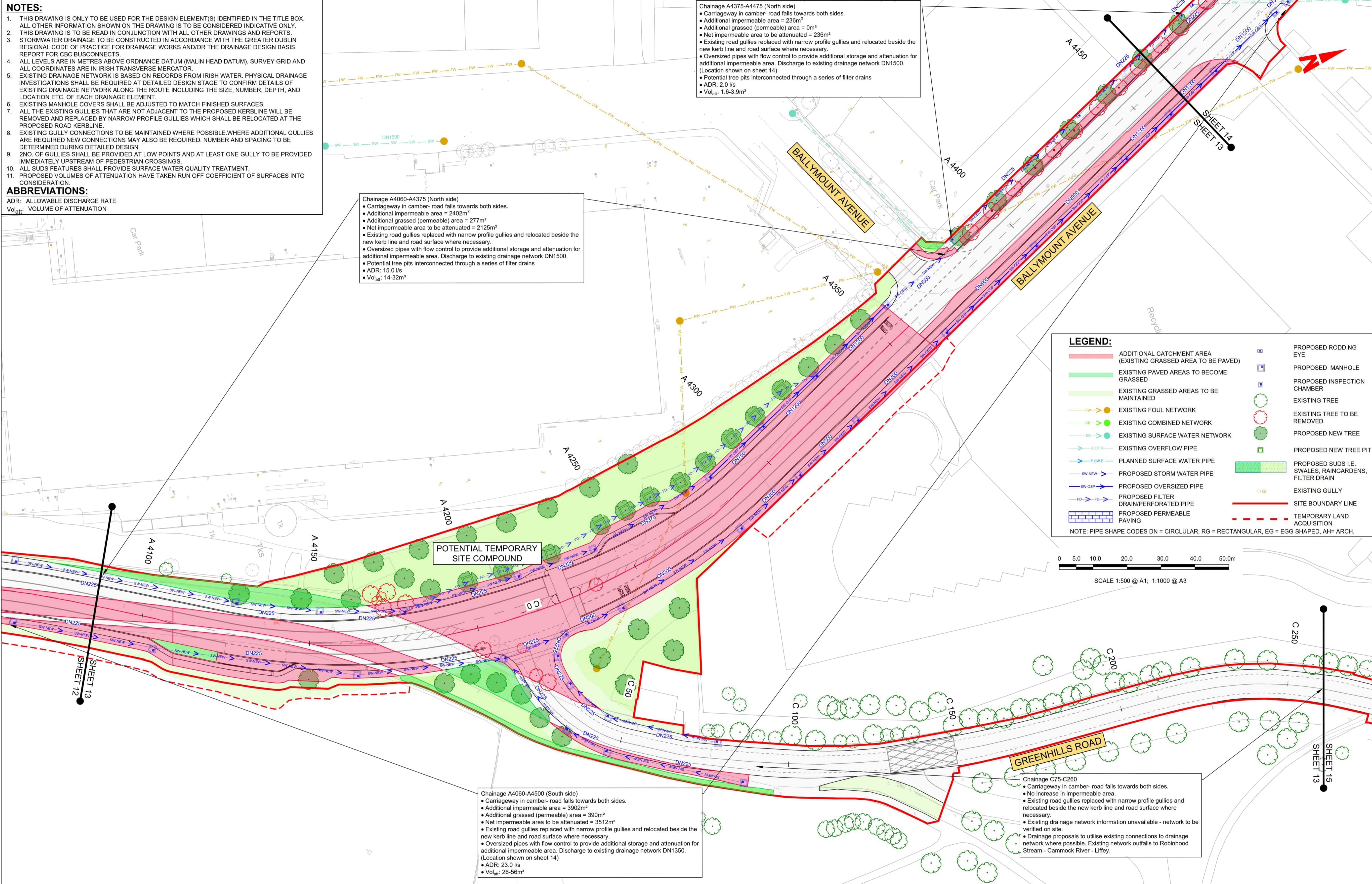
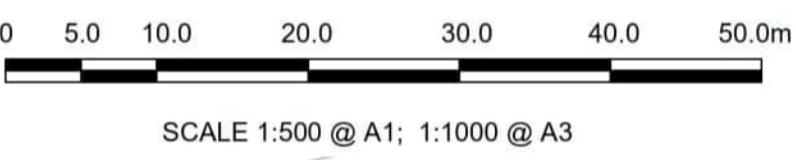
Chainage C75-C260

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Robinhood Stream - Cammock River - Liffey.

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 NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PLANNED SURFACE WATER PIPE		EXISTING GULLY
	PROPOSED STORM WATER PIPE		SITE BOUNDARY LINE
	PROPOSED OVERSIZED PIPE		TEMPORARY LAND ACQUISITION
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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA Originator Code: ACM

Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0013	Sheet Number: 13 of 56	Status: A	Rev: M01

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- 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 A4490-A4850 (North side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 1858m²
- Additional grassed (permeable) area = 122m²
- Net impermeable area to be attenuated = 1736m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary.
- Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 60 l/s
- Vol_{att}: 0-6.2m³

Chainage A4520-A4850 (South side)

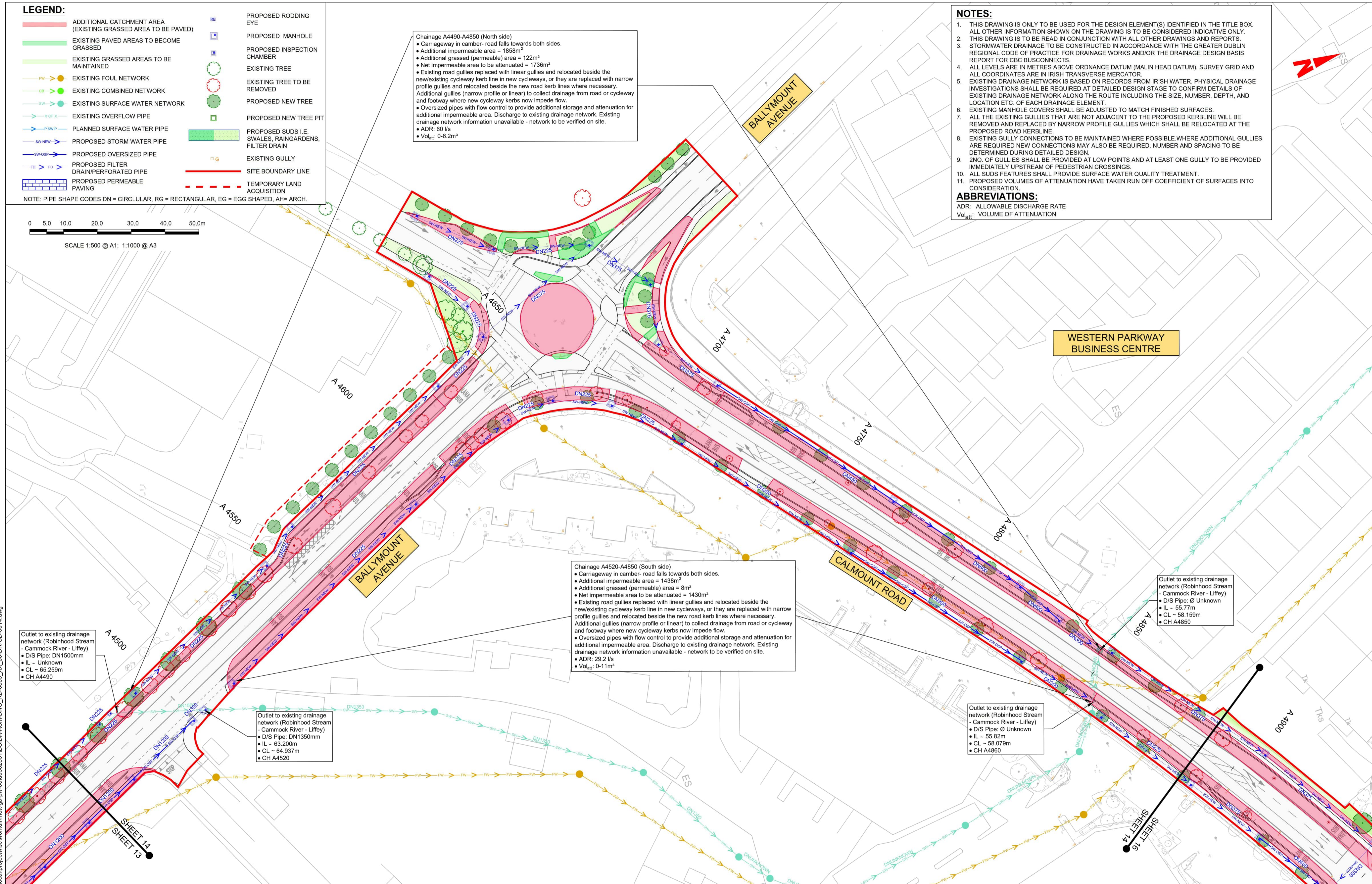
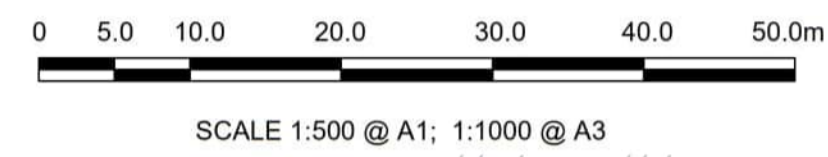
- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 1438m²
- Additional grassed (permeable) area = 8m²
- Net impermeable area to be attenuated = 1430m²
- Existing road gullies replaced with linear gullies, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary.
- Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 29.2 l/s
- Vol_{att}: 0-11m³

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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



Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: DN1500mm
- IL - Unknown
- CL - 65.259m
- CH A4490

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: DN1350mm
- IL - 63.200m
- CL - 64.937m
- CH A4520

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: Ø Unknown
- IL - 55.82m
- CL - 58.079m
- CH A4860

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: Ø Unknown
- IL - 55.77m
- CL - 58.159m
- CH A4850

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **AECOM** MOTT MACDONALD

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA Originator Code: ACM

Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0014	Sheet Number: 14 of 56	Status: A	Rev: M01

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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.
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

Chainage C375-C450 (South)

- Carriage in camber- road falls towards both sides.
- Additional impermeable area = 695m²
- Additional grassed (permeable) area = 105m²
- Net impermeable area to be attenuated = 590m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 4.8 l/s
- Vol_{att}: 6.8-14m³

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - Unknown

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - Unknown

Chainage C375-C450 (North)

- Carriage in camber- road falls towards both sides.
- Additional impermeable area = 756m²
- Additional grassed (permeable) area = 22m²
- Net impermeable area to be attenuated = 734m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Linear gullies to collect drainage from access ramp and stairs and outfall to proposed surface water pipework (Linear drainage and gullies not shown).
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 3.7 l/s
- Vol_{att}: 12-22-14m³

Chainage C260-C350

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Robinhood Stream - Cammock River - Liffey.

Chainage C350-C470 (South)

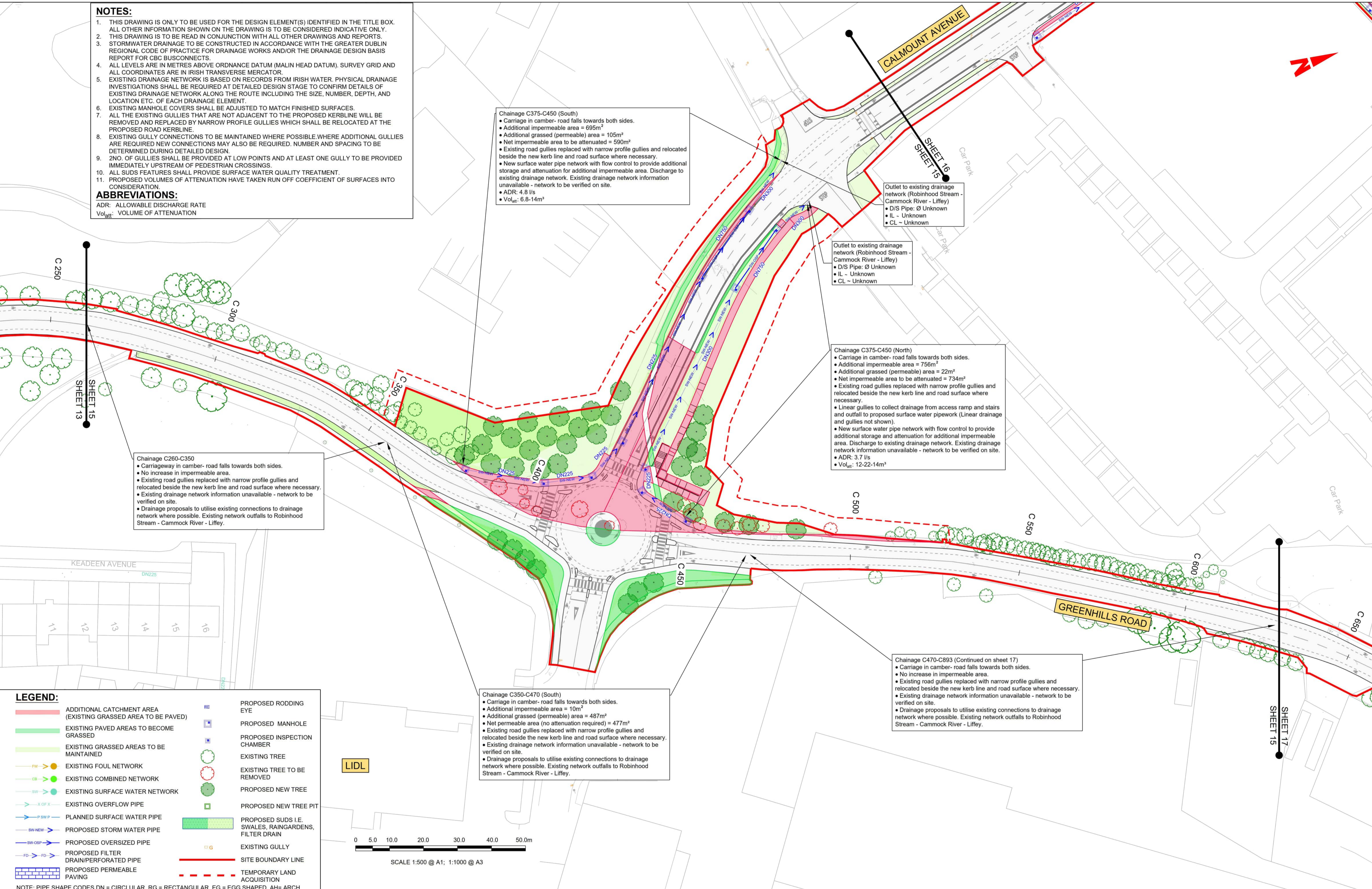
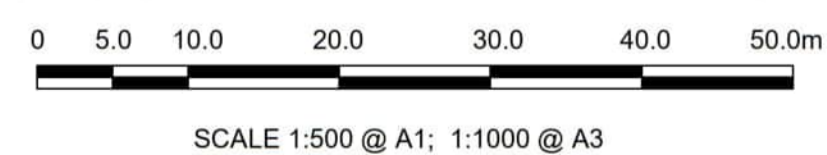
- Carriage in camber- road falls towards both sides.
- Additional impermeable area = 10m²
- Additional grassed (permeable) area = 487m²
- Net permeable area (no attenuation required) = 477m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Robinhood Stream - Cammock River - Liffey.

Chainage C470-C893 (Continued on sheet 17)

- Carriage in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Robinhood Stream - Cammock River - Liffey.

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 NETWORK | | PROPOSED NEW TREE |
| | EXISTING SURFACE WATER NETWORK | | PROPOSED NEW TREE PIT |
| | EXISTING OVERFLOW PIPE | | PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN |
| | PLANNED SURFACE WATER PIPE | | 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 CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.



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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

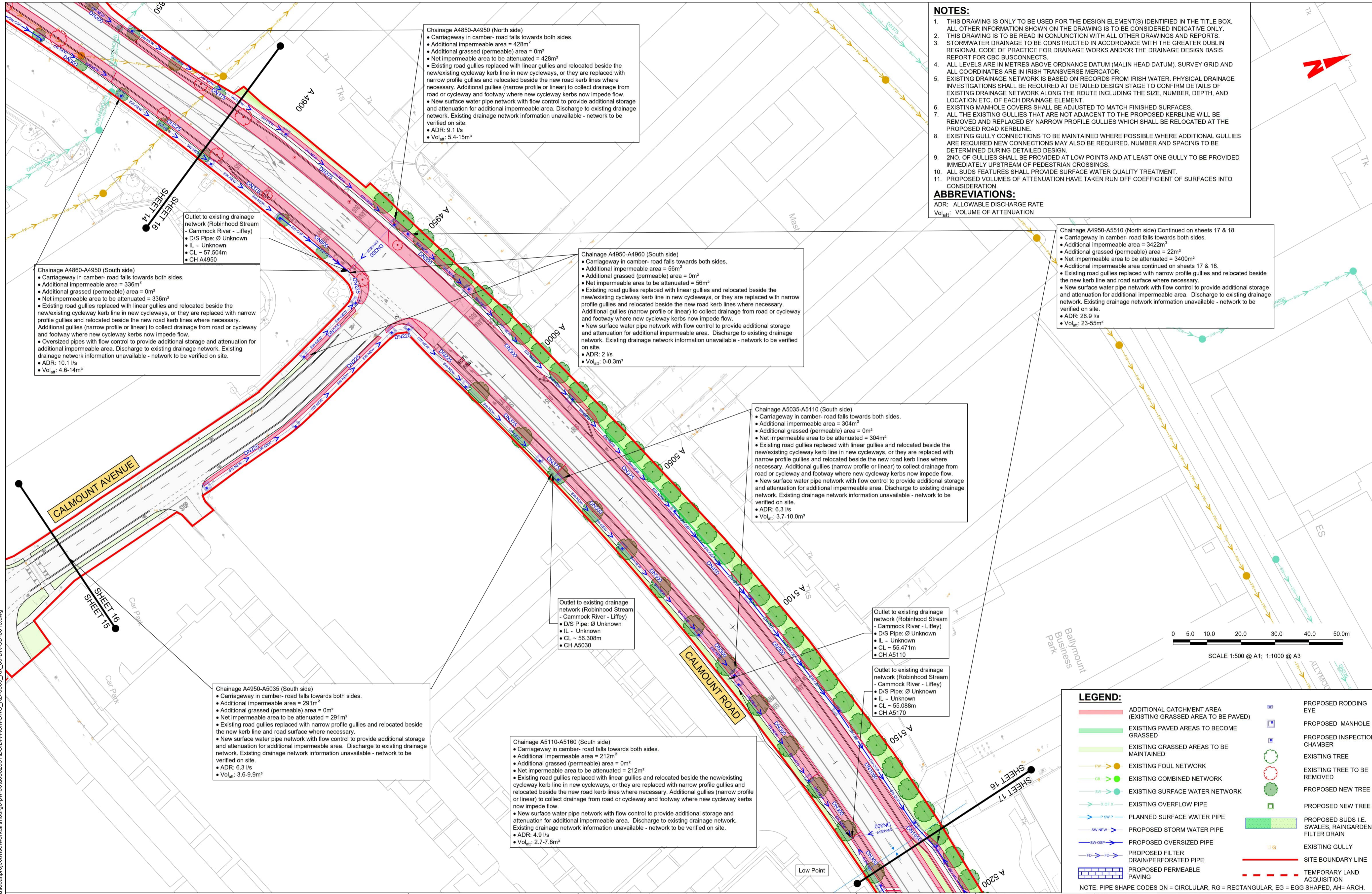
Engineering Designer: **AECOM** **MOTT MACDONALD**

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Project Code: BCIDA
Originator Code: ACM

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0015	Sheet Number 15 of 56	Status A	Rev M01



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

ABBREVIATIONS:

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

Chainage A4950-A5510 (North side) Continued on sheets 17 & 18
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 3422m²
 • Additional grassed (permeable) area = 22m²
 • Net impermeable area to be attenuated = 3400m²
 • Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
 • New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 26.9 l/s
 • Vol_{att}: 23-55m³

Chainage A4850-A4950 (North side)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 428m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 428m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 9.1 l/s
 • Vol_{att}: 5.4-15m³

Chainage A4860-A4950 (South side)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 336m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 336m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 10.1 l/s
 • Vol_{att}: 4.6-14m³

Chainage A4950-A4960 (South side)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 56m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 56m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 2 l/s
 • Vol_{att}: 0-0.3m³

Chainage A5035-A5110 (South side)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 304m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 304m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 6.3 l/s
 • Vol_{att}: 3.7-10.0m³

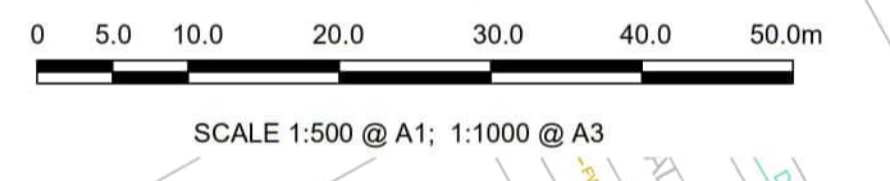
Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)
 • D/S Pipe: Ø Unknown
 • IL - Unknown
 • CL ~ 56.308m
 • CH A5030

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)
 • D/S Pipe: Ø Unknown
 • IL - Unknown
 • CL ~ 55.471m
 • CH A5110

Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)
 • D/S Pipe: Ø Unknown
 • IL - Unknown
 • CL ~ 55.088m
 • CH A5170

Chainage A4950-A5035 (South side)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 291m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 291m²
 • Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
 • New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 6.3 l/s
 • Vol_{att}: 3.6-9.9m³

Chainage A5110-A5160 (South side)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 212m²
 • Additional grassed (permeable) area = 0m²
 • Net impermeable area to be attenuated = 212m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
 • ADR: 4.9 l/s
 • Vol_{att}: 2.7-7.6m³



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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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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NOTE: PIPE SHAPE CODE DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH = ARCH.

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
 Scale: 1:500 @ A1, 1:1000 @ A3
 Drawn: A.FLEMING, Checked: R.LOUGH, Approved: C.ACTON

Project Code: BCIDA, Originator Code: ACM, QMS Code:

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

Drawing Title: **TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS**

Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0016	Sheet Number: 16 of 56	Status: A	Rev: M01
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Outlet to existing drainage network (Robinhood Stream - Cammock River - Liffey)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 55.088m
- CH A5170

Chainage A5160-A5470 (South side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 2850m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 2850m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary.
- Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Linear gullies to collect drainage from access ramp and stairs and outfall to proposed surface water pipework (Linear drainage and gullies not shown).
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network. Existing drainage network information unavailable - network to be verified on site.
- ADR: 9.0 l/s
- Vol_{att}: 35-64m³

Chainage C625-C893

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 65m²
- Additional grassed (permeable) area = 383m²
- Net permeable area (no attenuation required) = 318m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Existing drainage network information unavailable - network to be verified on site.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Robinhood Stream - Cammock River - Liffey.

Chainage A5340-A5350 (North side)

- Additional impermeable area = 324m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 324m²
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Proposed road access to discharge into existing car park drainage.
- Existing car park drainage network information unavailable - network to be verified on site.
- ADR: 2.1 l/s
- Vol_{att}: 0m³
- Existing Drainage network outfall unknown.

Chainage A5180-A5450 (North side)

- See sheet 16 for drainage details.
- BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0016

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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.

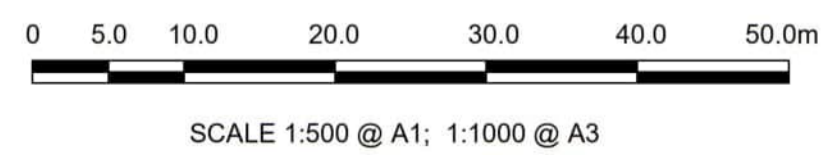
ABBREVIATIONS:

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

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 NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PLANNED SURFACE WATER PIPE		EXISTING GULLY
	PROPOSED STORM WATER PIPE		TEMPORARY LAND ACQUISITION PAVING
	PROPOSED OVERSIZED PIPE		
	PROPOSED FILTER DRAIN/PERFORATED PIPE		
	PROPOSED PERMEABLE PAVING		

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



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Rev	Date	Drm	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client

Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer

Programme Title

**BUSCONNECTS DUBLIN
CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Drawing Title

TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME
PROPOSED SURFACE WATER DRAINAGE WORKS

Drawing File Name

BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0017

Sheet Number

17 of 56

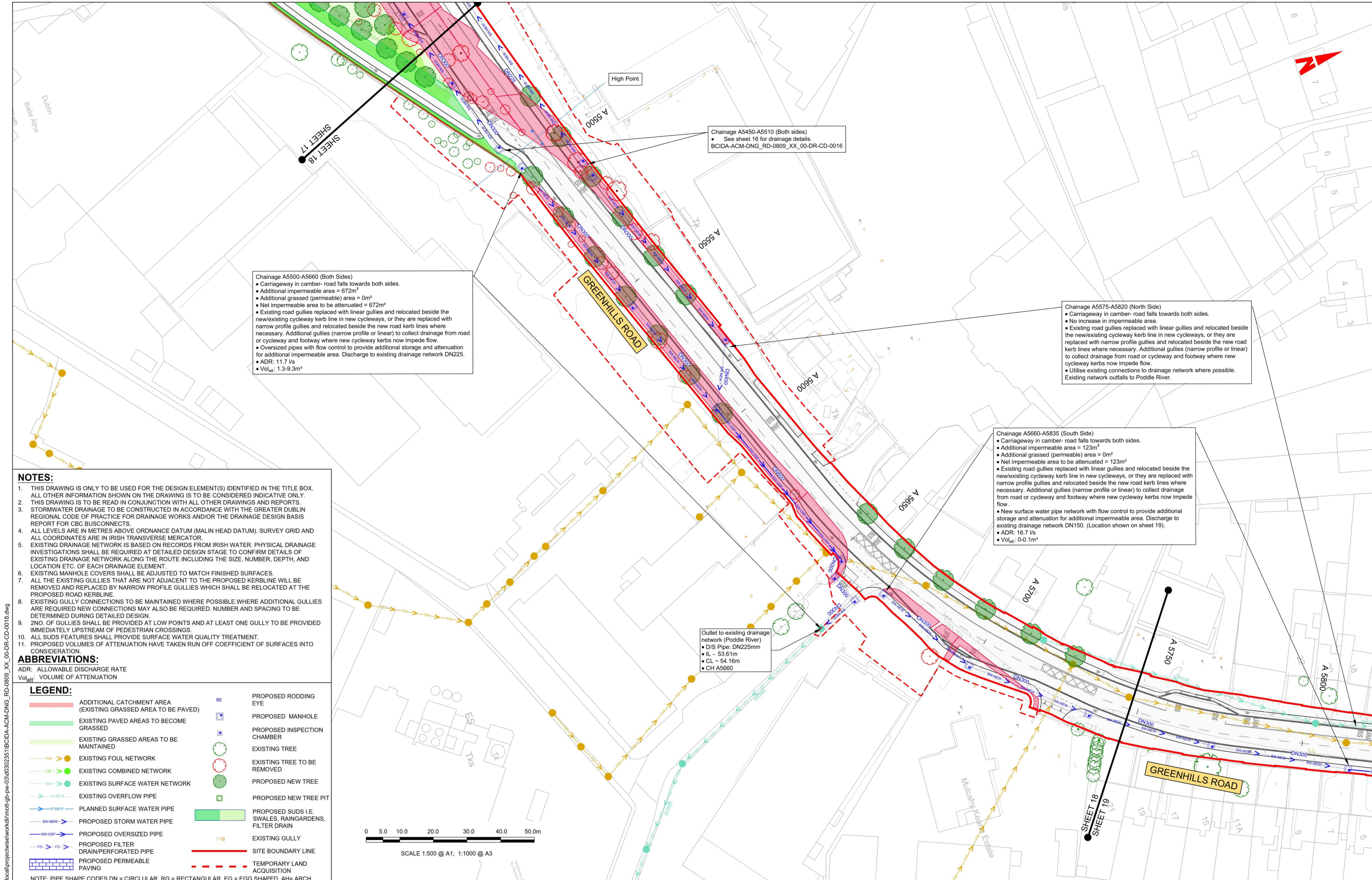
Status

A

Rev

M01

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Chainage A5500-A5660 (Both Sides)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 672m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 672m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Oversized pipes with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN225.
- ADR: 11.7 l/s
- Vol_{att}: 1.3-9.3m³

Chainage A5450-A5510 (Both sides)

- See sheet 16 for drainage details.
- BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0016

Chainage A5575-A5820 (North Side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Chainage A5660-A5835 (South Side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 123m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 123m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN150. (Location shown on sheet 19).
- ADR: 16.7 l/s
- Vol_{att}: 0-0.1m³

Outlet to existing drainage network (Poddle River)

- D/S Pipe: DN225mm
- IL - 53.61m
- CL - 54.16m
- CH A5660

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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.
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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.

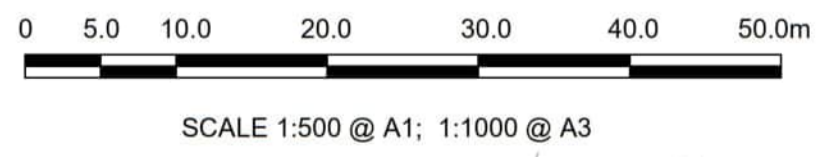
ABBREVIATIONS:

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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

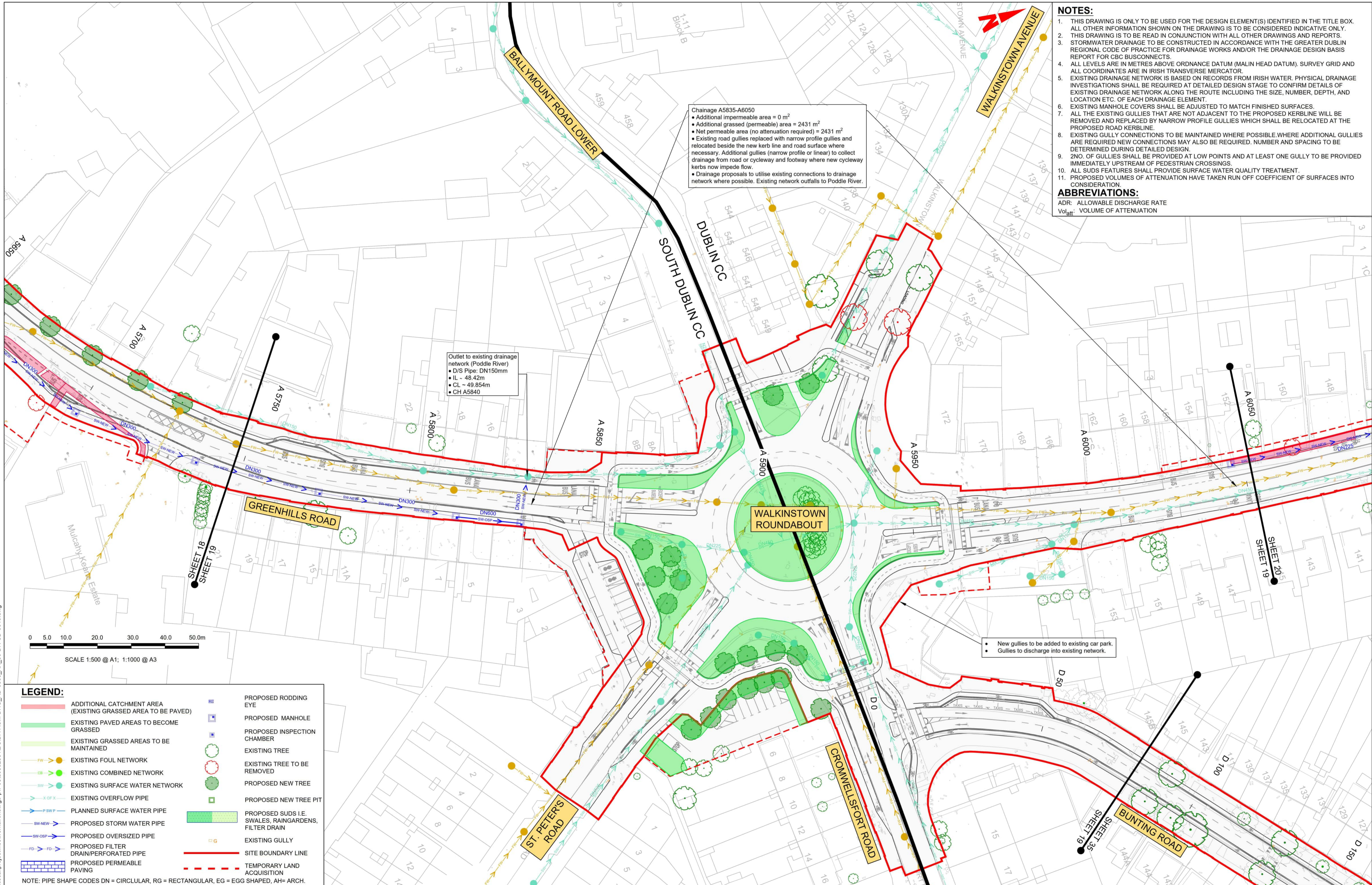
Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Project Code: BCIDA
Originator Code: ACM

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0018	Sheet Number: 18 of 56	Status: A	Rev: M01

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 - 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

Chainage A5835-A6050
 • Additional impermeable area = 0 m²
 • Additional grassed (permeable) area = 2431 m²
 • Net permeable area (no attenuation required) = 2431 m²
 • Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Outlet to existing drainage network (Poddle River)
 • D/S Pipe: DN150mm
 • IL - 48.42m
 • CL - 49.854m
 • CH A5840

• New gullies to be added to existing car park.
 • Gullies to discharge into existing 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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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Project Ireland 2040
 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
 Scale: 1:500 @ A1, 1:1000 @ A3
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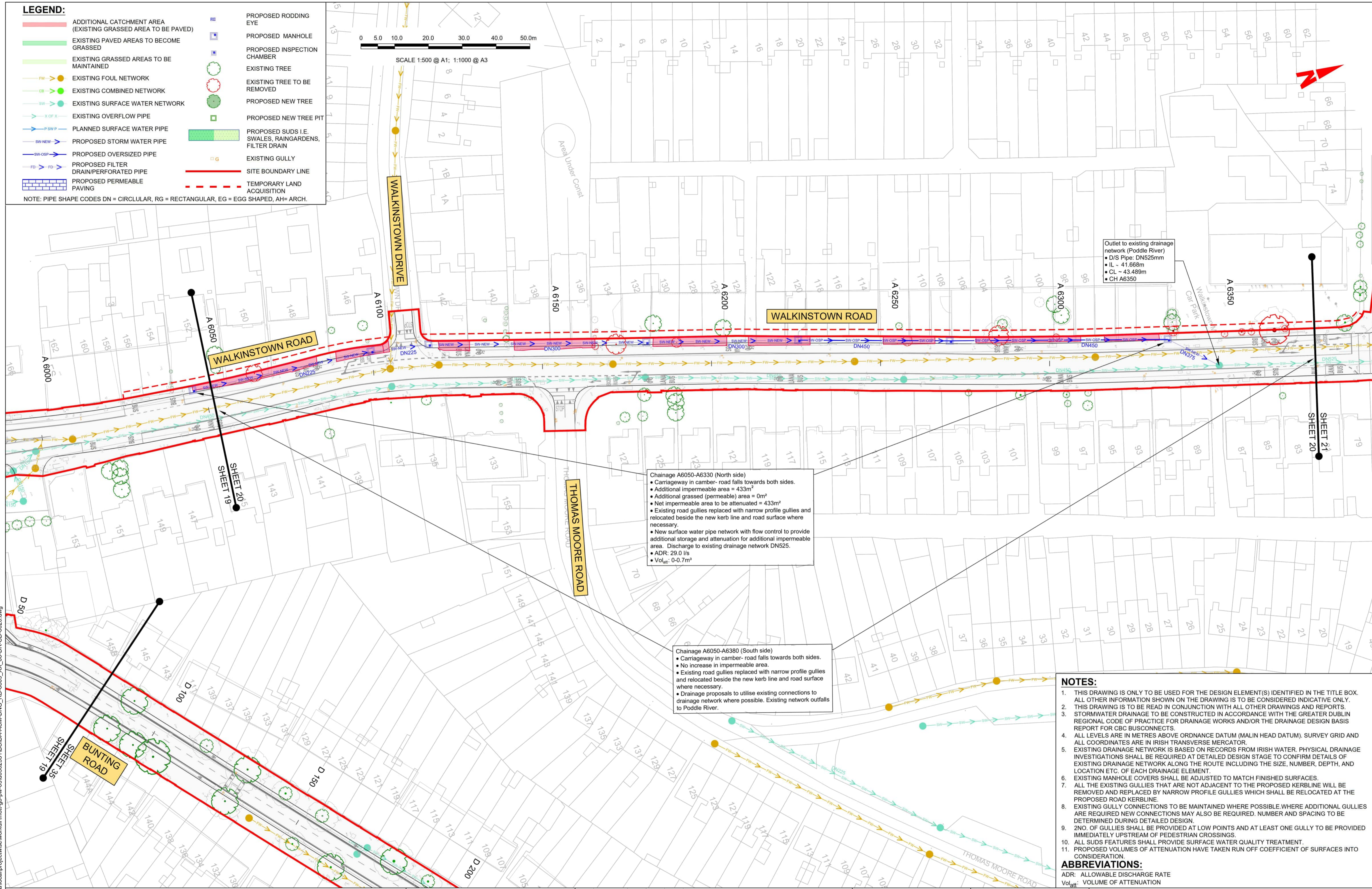
Project Code: BCIDA, Originator Code: ACM, QMS Code:

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Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0019	Sheet Number: 19 of 56	Status: A	Rev: M01

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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 A6050-A6330 (North side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 433m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 433m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN525.
- ADR: 29.0 l/s
- Vol_{att}: 0-0.7m³

Chainage A6050-A6380 (South side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Outlet to existing drainage network (Poddle River)

- D/S Pipe: DN525mm
- IL - 41.668m
- CL - 43.489m
- CH A6350

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 - 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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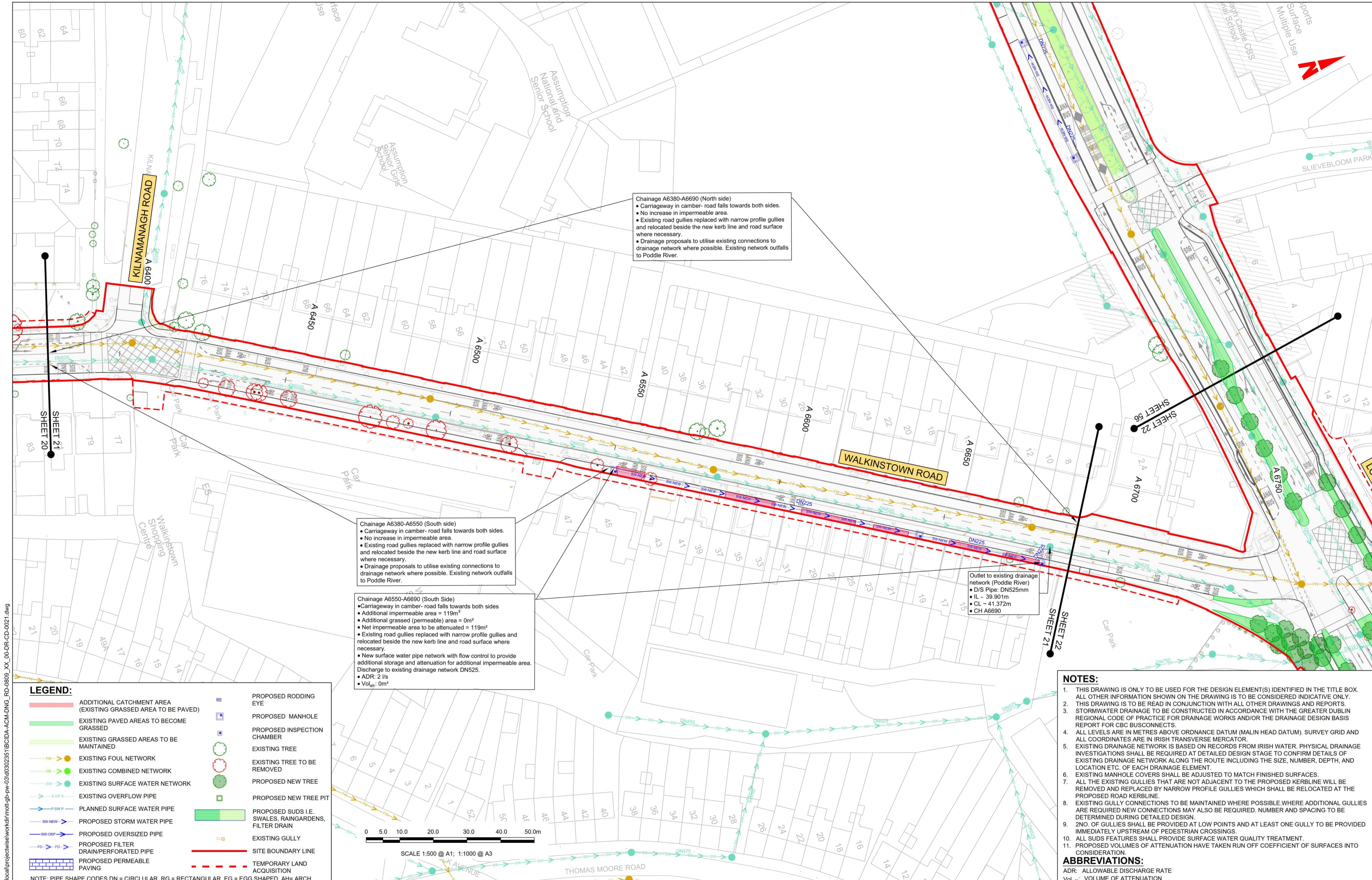


Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client
NTA
 Údarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer
AECOM
MOTT MACDONALD

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0020	Sheet Number 20 of 56	Status A	Rev M01



Chainage A6380-A6690 (North side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Chainage A6380-A6550 (South side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Chainage A6550-A6690 (South Side)

- Carriageway in camber- road falls towards both sides
- Additional impermeable area = 119m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 119m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN525.
- ADR: 2 l/s
- Vol_{att}: 0m³

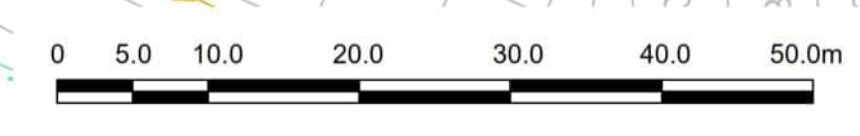
Outlet to existing drainage network (Poddle River)

- D/S Pipe: DN525mm
- IL - 39.901m
- CL - 41.372m
- CH A6690

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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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.
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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:

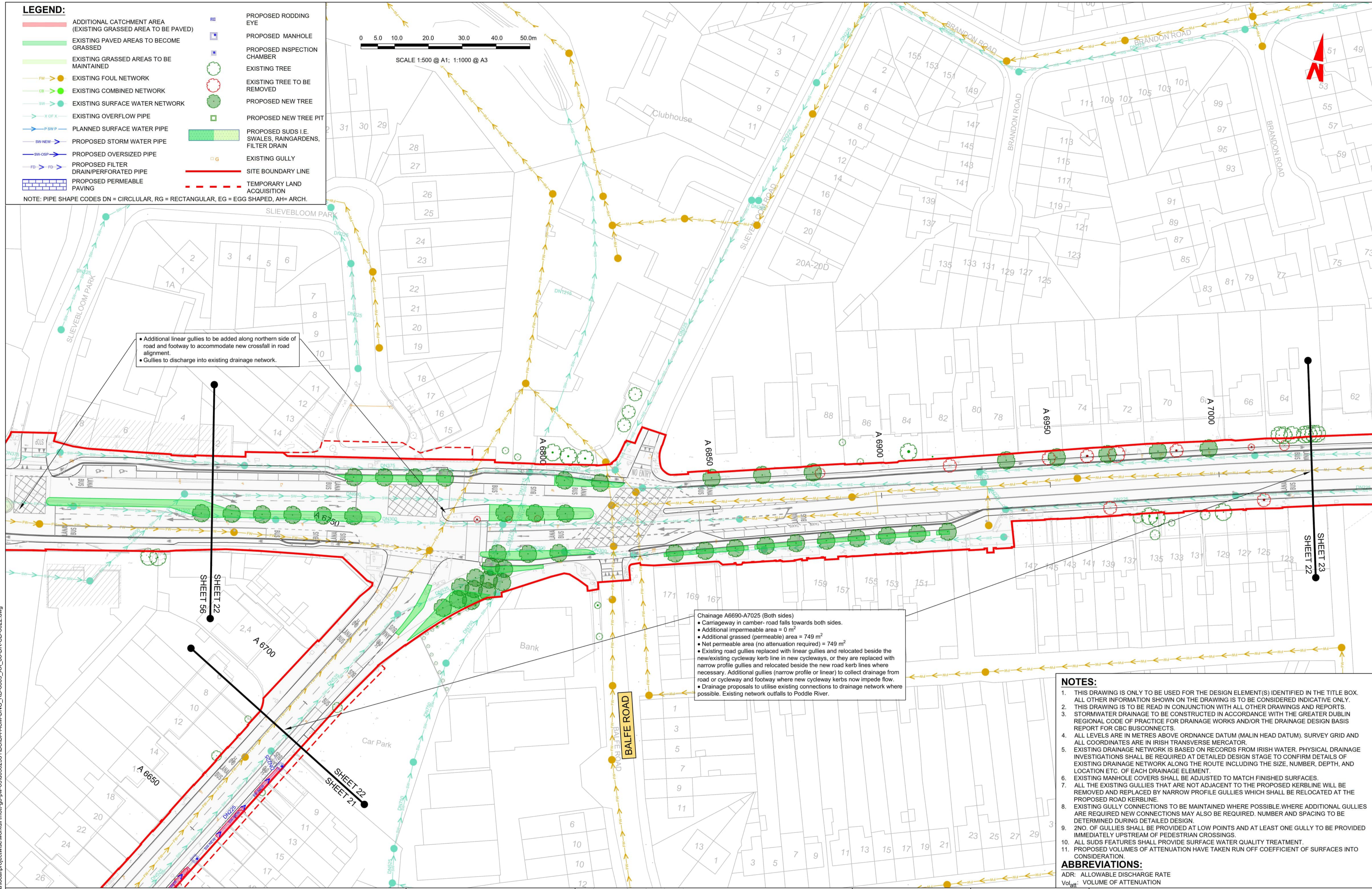
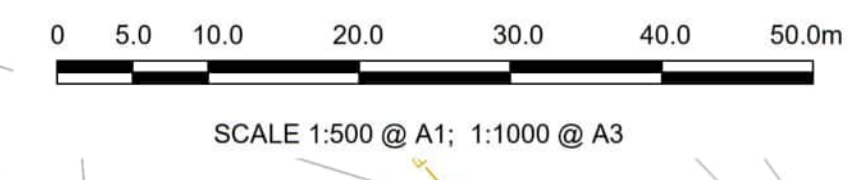
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<p>Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3</p> <p>Project Code: BCIDA Originator Code: ACM</p>					<p>Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON</p>		<p>Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0021</p>		<p>Sheet Number: 21 of 56 Status: A Rev: M01</p>			

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
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- SITE BOUNDARY LINE
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Additional linear gullies to be added along northern side of road and footway to accommodate new crossfall in road alignment.
 Gullies to discharge into existing drainage network.

Chainage A6690-A7025 (Both sides)
 • Carriageway in camber- road falls towards both sides.
 • Additional impermeable area = 0 m²
 • Additional grassed (permeable) area = 749 m²
 • Net permeable area (no attenuation required) = 749 m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

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Engineering Designer: **AECOM** MOTT MACDONALD

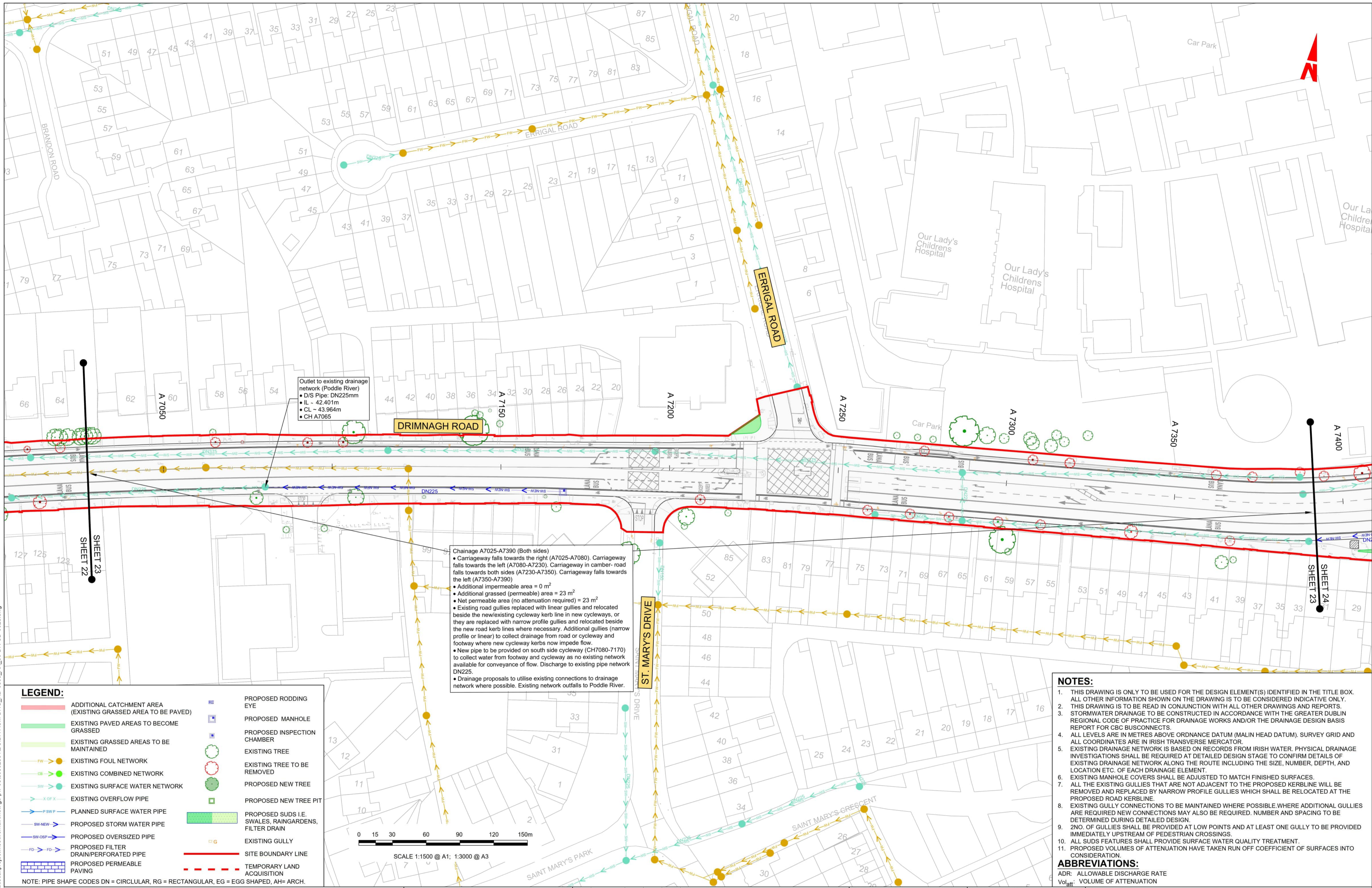
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Project Code: BCIDA Originator Code: ACM

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Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0022	Sheet Number: 22 of 56	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Outlet to existing drainage network (Poddlie River)
 • D/S Pipe: DN225mm
 • IL - 42.401m
 • CL - 43.964m
 • CH A7065

Chainage A7025-A7390 (Both sides)
 • Carriageway falls towards the right (A7025-A7080). Carriageway falls towards the left (A7080-A7230). Carriageway in camber-road falls towards both sides (A7230-A7350). Carriageway falls towards the left (A7350-A7390)
 • Additional impermeable area = 0 m²
 • Additional grassed (permeable) area = 23 m²
 • Net permeable area (no attenuation required) = 23 m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • New pipe to be provided on south side cycleway (CH7080-7170) to collect water from footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN225.
 • Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddlie River.

LEGEND:

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- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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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Engineering Designer
AECOM
MOTT MACDONALD

Programme Title
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CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title
 TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME
 PROPOSED SURFACE WATER DRAINAGE WORKS

Drawing File Name
 BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0023

Sheet Number
 23 of 56

Status
 A

Rev
 M01

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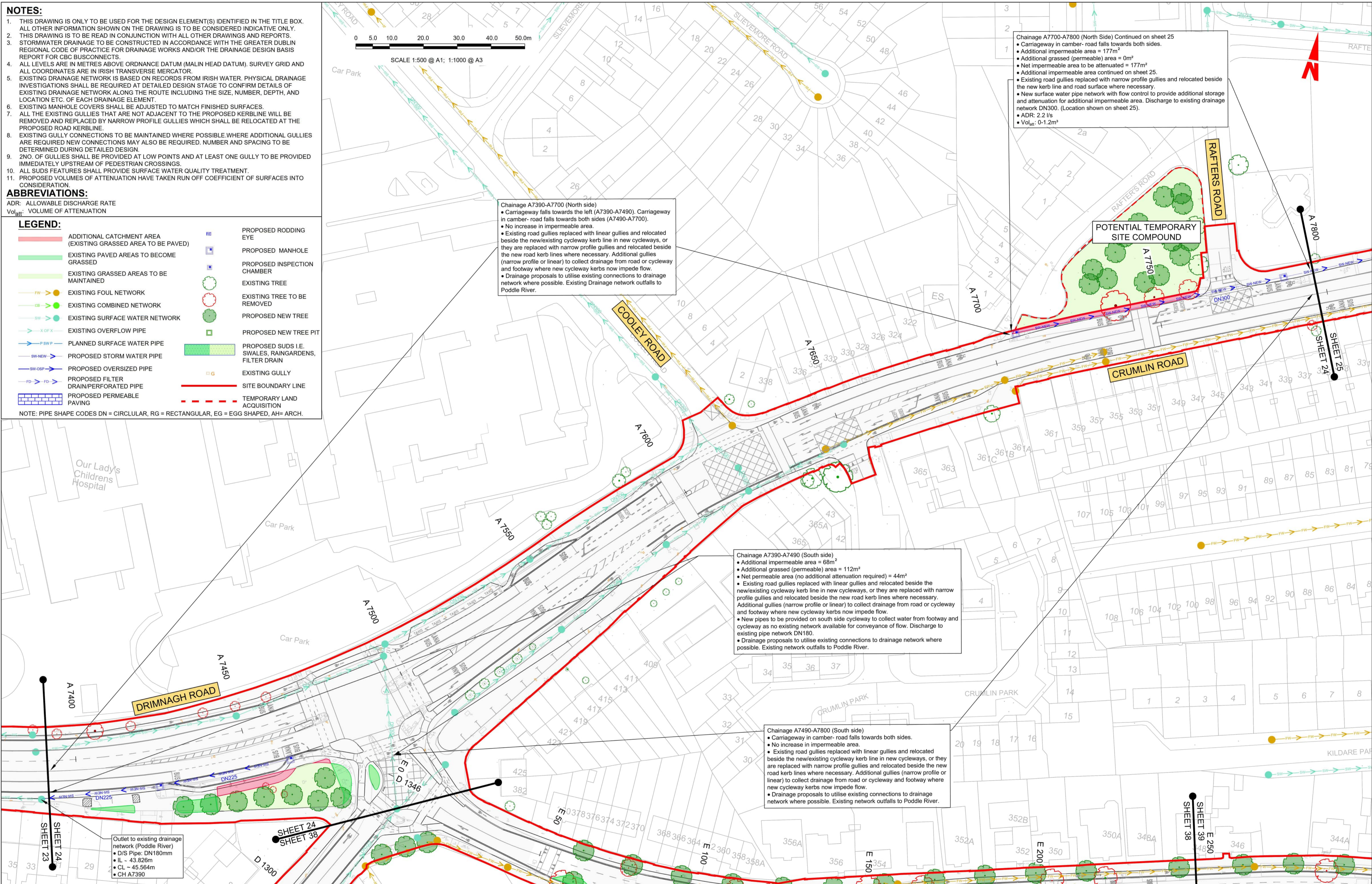
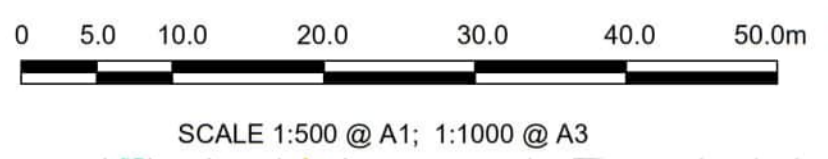
ABBREVIATIONS:

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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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.



Chainage A7700-A7800 (North Side) Continued on sheet 25

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 177m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 177m²
- Additional impermeable area continued on sheet 25.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN300. (Location shown on sheet 25).
- ADR: 2.2 l/s
- Vol_{att}: 0-1.2m³

Chainage A7390-A7700 (North side)

- Carriageway falls towards the left (A7390-A7490). Carriageway in camber- road falls towards both sides (A7490-A7700).
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing Drainage network outfalls to Poddle River.

Chainage A7390-A7490 (South side)

- Additional impermeable area = 68m²
- Additional grassed (permeable) area = 112m²
- Net permeable area (no additional attenuation required) = 44m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided on south side cycleway to collect water from footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN180.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Chainage A7490-A7800 (South side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

Outlet to existing drainage network (Poddle River)

- D/S Pipe: DN180mm
- IL - 43.826m
- CL - 45.564m
- CH A7390

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Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

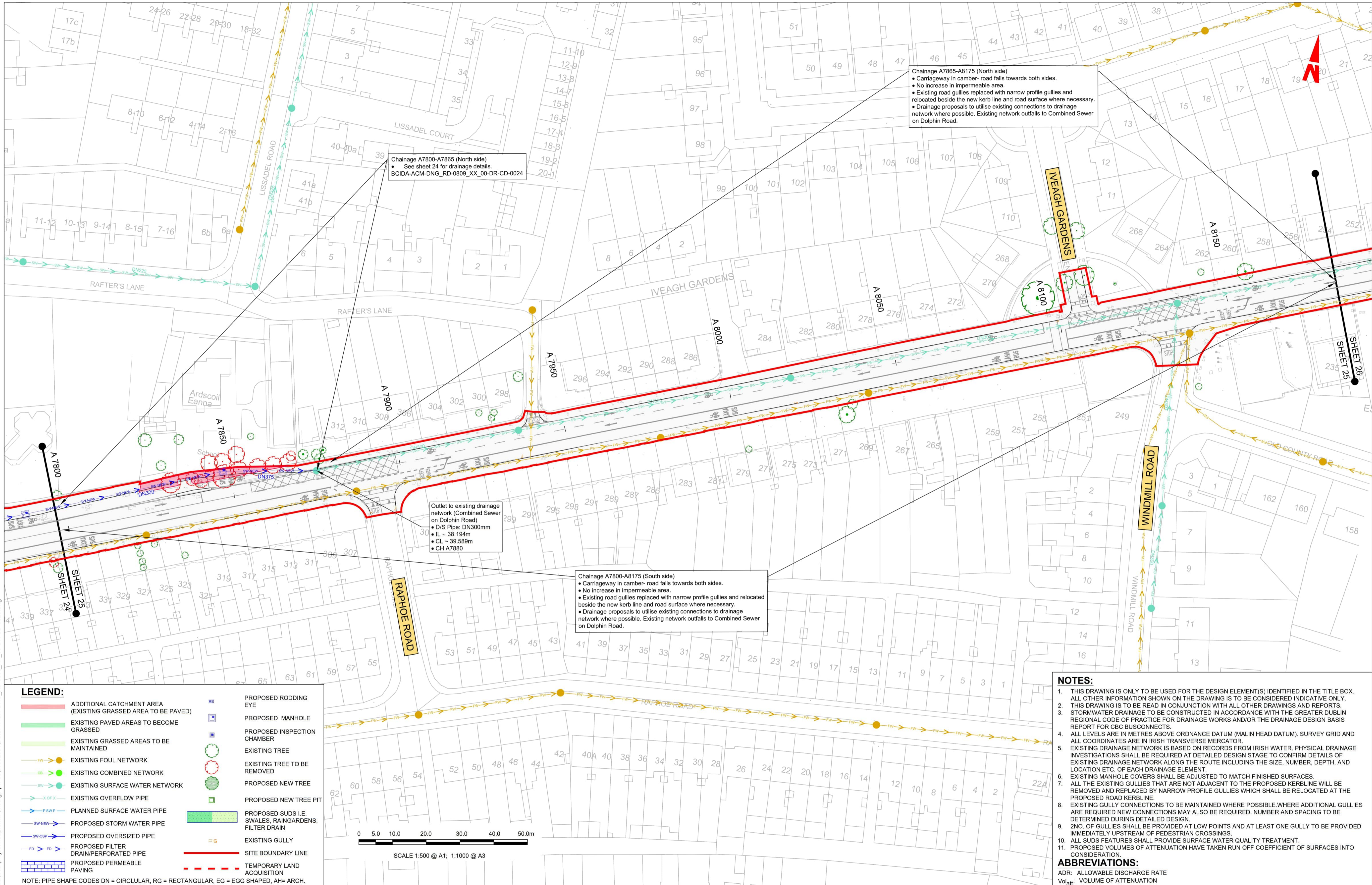
Engineering Designer: **AECOM** **MOTT MACDONALD**

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Project Code: BCIDA Originator Code: ACM QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0024	Sheet Number: 24 of 56	Status: A	Rev: M01



Chainage A7865-A8175 (North side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dolphin Road.

Chainage A7800-A7865 (North side)

- See sheet 24 for drainage details.
- BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0024

Outlet to existing drainage network (Combined Sewer on Dolphin Road)

- D/S Pipe: DN300mm
- IL - 38.194m
- CL - 39.589m
- CH A7880

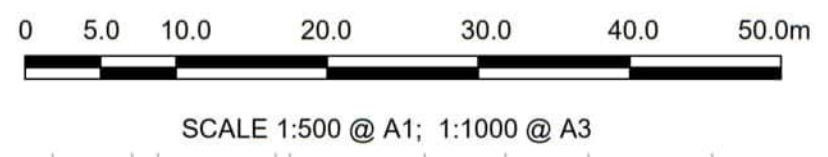
Chainage A7800-A8175 (South side)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dolphin Road.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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4. ALL LEVELS ARE IN METRES ABOVE ORDINANCE 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

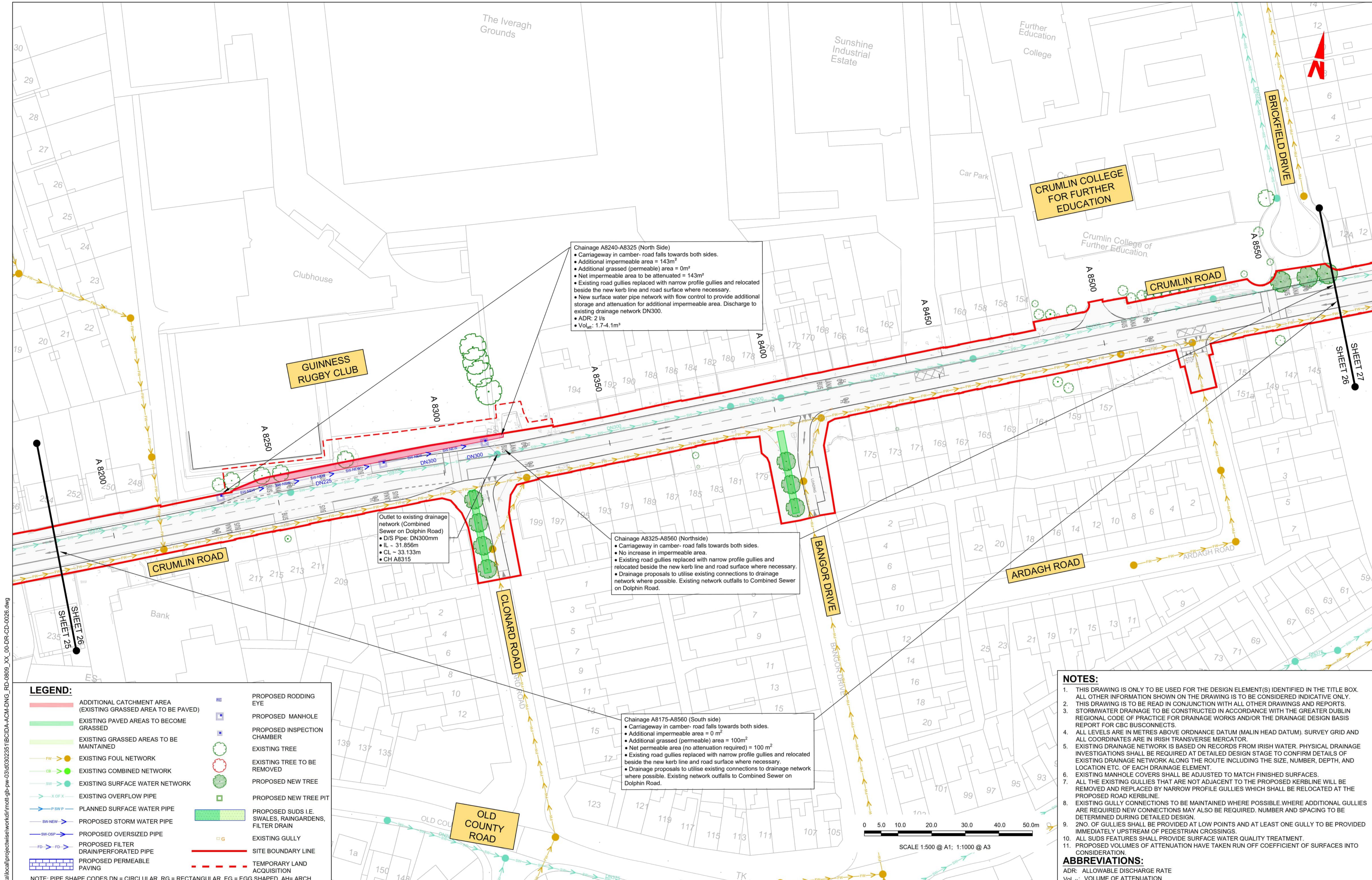
Engineering Designer: **AECOM** MOTT MACDONALD

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Project Code: BCIDA
Originator Code: ACM

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0025	Sheet Number: 25 of 56	Status: A	Rev: M01



Chainage A8240-A8325 (North Side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 143m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 143m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN300.
- ADR: 2 l/s
- Vol_{att}: 1.7-4.1m³

Outlet to existing drainage network (Combined Sewer on Dolphin Road)

- DIS Pipe: DN300mm
- IL - 31.856m
- CL - 33.133m
- CH A8315

Chainage A8325-A8560 (Northside)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dolphin Road.

Chainage A8175-A8560 (South side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 100m²
- Net permeable area (no attenuation required) = 100 m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dolphin Road.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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 CODING DN = CIRCULAR, 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.
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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
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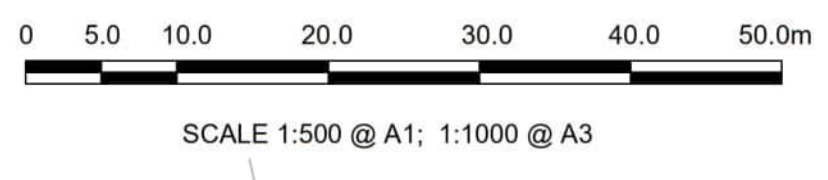
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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Project Code BCIDA Originator Code ACM</p>		<p>QMS Code</p>		<p>Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0026 Sheet Number 26 of 56 Status A Rev M01</p>	

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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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CRUMLIN SHOPPING CENTRE

Chainage A8570-A8975 (North side)

- Carriageway in camber- road falls towards both sides (A8570-A8900). Road falls towards the right (A8900-A8975).
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 210 m²
- Net permeable area (no attenuation required) = 210 m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dolphin Road.

Chainage A8610-A8700 (South Side)

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 114m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 114m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN300.
- ADR: 4.9 l/s
- Vol_{att}: 0m³

Chainage A8700-A8975 (South side)

- Carriageway in camber- road falls towards both sides (A8700-A8900). Road falls towards the right (A8900-A8975).
- No increase in impermeable area.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dolphin Road.

Outlet to existing drainage network (Combined Sewer on Dolphin Road)

- D/S Pipe: DN300mm
- IL - 27.463m
- CL - 29.591m
- CH A8750

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

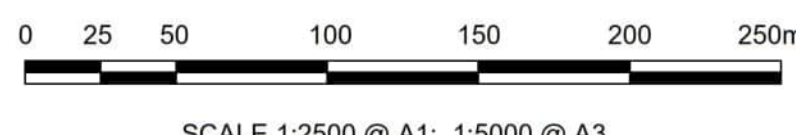
Drawn: A.FLEMING, Checked: R.LOUGH, Approved: C.ACTON

Project Code: BCIDA, Originator Code: ACM, QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0027	Sheet Number: 27 of 56	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 NETWORK
 - EXISTING SURFACE WATER NETWORK
 - EXISTING OVERFLOW PIPE
 - PLANNED SURFACE WATER PIPE
 - 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 A8975-A9350 (Both sides)

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Parnell Road.

POTENTIAL TEMPORARY SITE COMPOUND

- 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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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **AECOM** MOTT MACDONALD

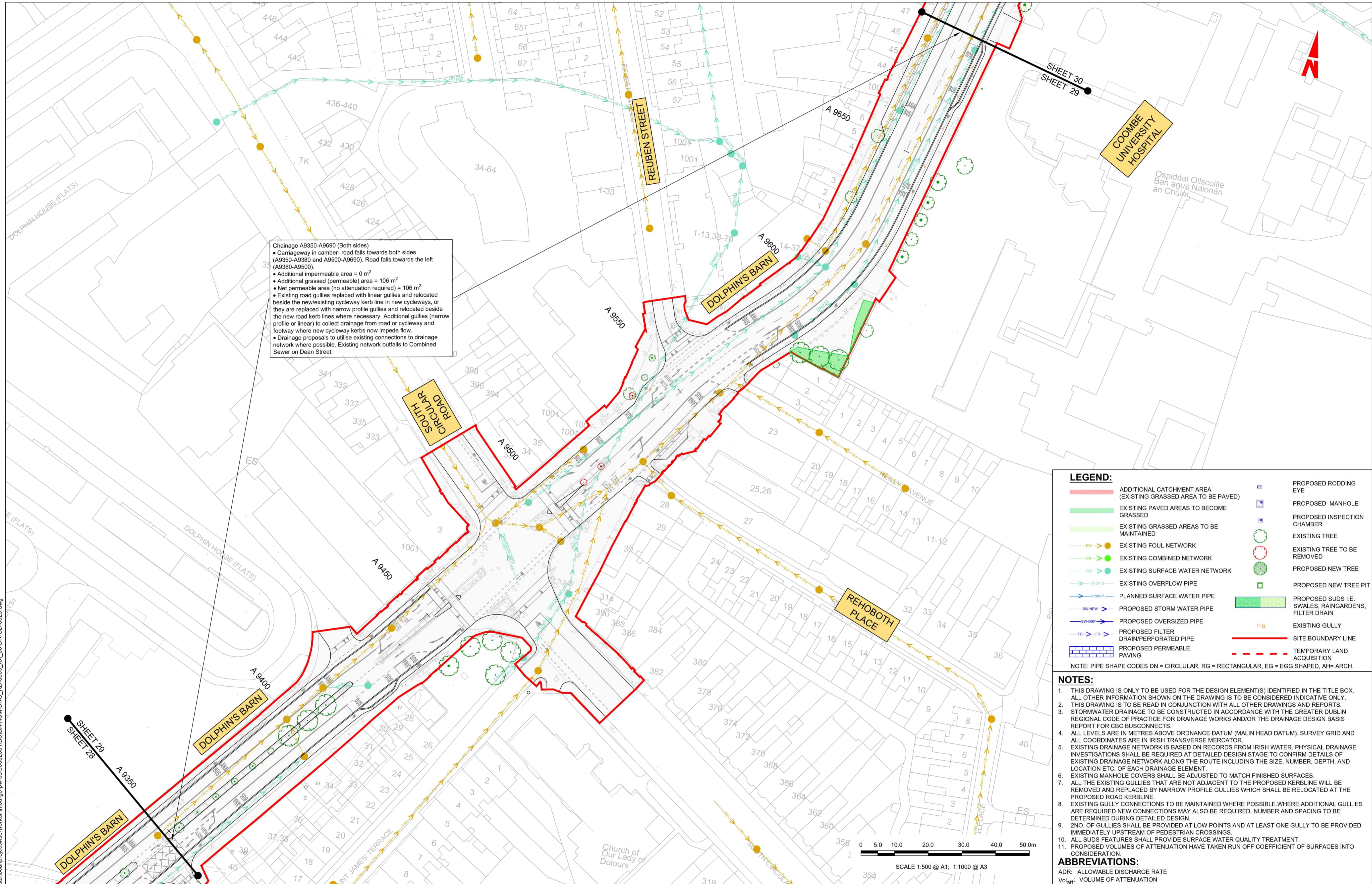
Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA Originator Code: ACM

Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0028	Sheet Number: 28 of 56	Status: A	Rev: M01

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Chainage A9350-A9690 (Both sides)

- Carriageway in camber- road falls towards both sides (A9350-A9380 and A9500-A9690). Road falls towards the left (A9380-A9500).
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 106 m²
- Net permeable area (no attenuation required) = 106 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Project Code: BCIDA
Originator Code: ACM

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

Drawing Title: **TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS**

Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0029

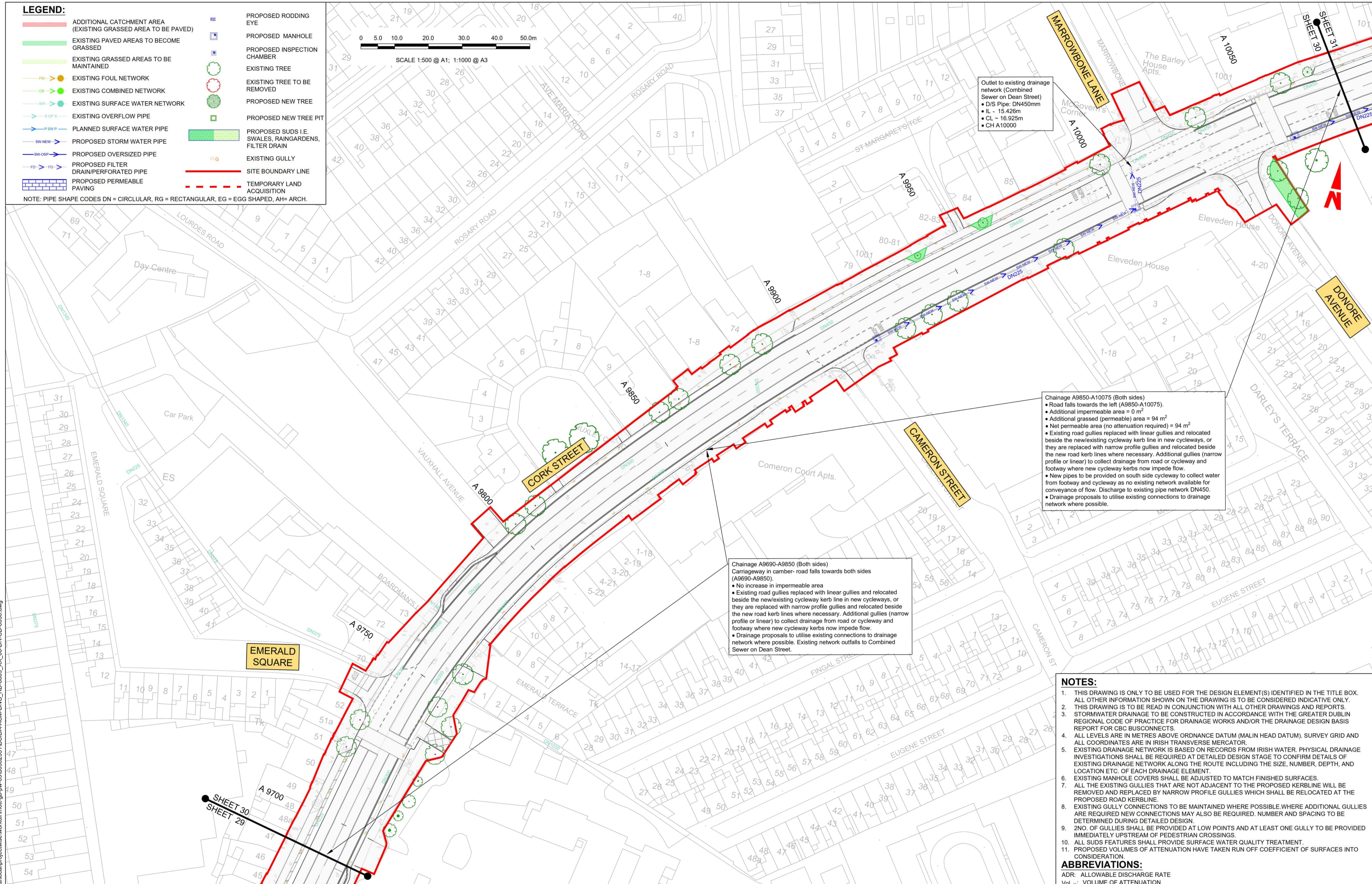
Sheet Number: 29 of 56
Status: A
Rev: M01

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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.



Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN450mm
- IL - 15.426m
- CL - 16.925m
- CH A10000

Chainage A9850-A10075 (Both sides)

- Road falls towards the left (A9850-A10075).
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 94 m²
- Net permeable area (no attenuation required) = 94 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided on south side cycleway to collect water from footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN450.
- Drainage proposals to utilise existing connections to drainage network where possible.

Chainage A9690-A9850 (Both sides)

Carriageway in camber- road falls towards both sides (A9690-A9850).

- No increase in impermeable area
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

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 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
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 - 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
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Client: **NTA**
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National Transport Authority

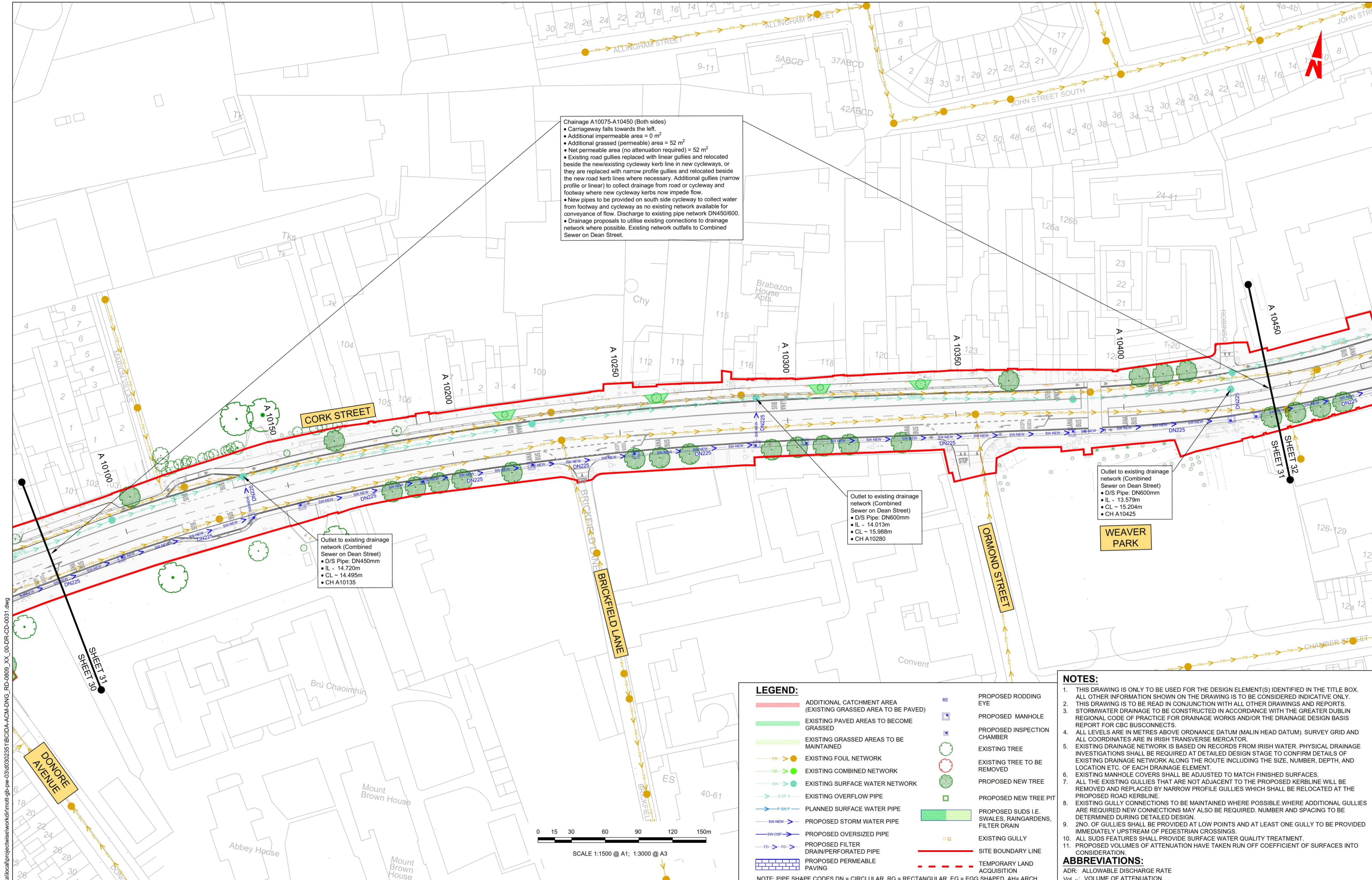
Engineering Designer: **AECOM**, **MOTT MACDONALD**

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING, Checked: R.LOUGH, Approved: C.ACTON

Project Code: BCIDA, Originator Code: ACM, QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0030	Sheet Number: 30 of 56	Status: A	Rev: M01



Chainage A10075-A10450 (Both sides)

- Carriageway falls towards the left.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 52 m²
- Net permeable area (no attenuation required) = 52 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided on south side cycleway to collect water from footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN450/600.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN450mm
- IL - 14.720m
- CL - 14.495m
- CH A10135

Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN600mm
- IL - 14.013m
- CL - 15.988m
- CH A10280

Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN600mm
- IL - 13.579m
- CL - 15.204m
- CH A10425

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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.

NOTES:

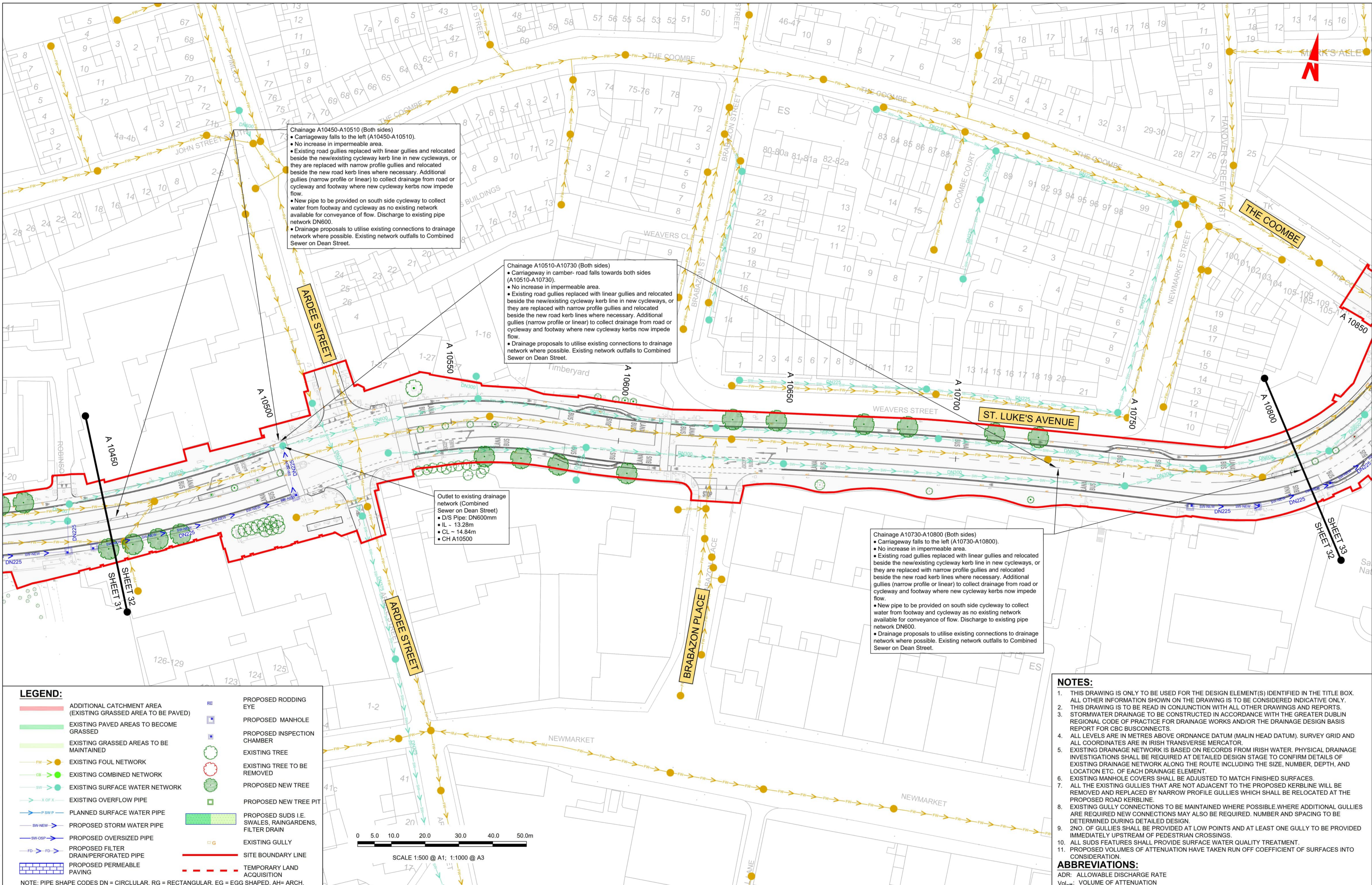
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- EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
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- 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING												
<p>Date</p> <p>28/03/23</p> <p>Scale 1:500 @ A1 1:1000 @ A3</p> <p>Project Code</p> <p>BCIDA</p> <p>Originator Code</p> <p>ACM</p> <p>QMS Code</p>	<p>Drawn</p> <p>A.FLEMING</p> <p>Checked</p> <p>R.LOUGH</p> <p>Approved</p> <p>C.ACTON</p>	<p>Drawing Title</p> <p>TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>															
<p>Drawing File Name</p> <p>BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0031</p>		<p>Sheet Number</p> <p>31 of 56</p>	<p>Status</p> <p>A</p>	<p>Rev</p> <p>M01</p>													

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Chainage A10450-A10510 (Both sides)

- Carriageway falls to the left (A10450-A10510).
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipe to be provided on south side cycleway to collect water from footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN600.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

Chainage A10510-A10730 (Both sides)

- Carriageway in camber-road falls towards both sides (A10510-A10730).
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

Outlet to existing drainage network (Combined Sewer on Dean Street)
(A10510-A10730)

- D/S Pipe: DN600mm
- IL - 13.28m
- CL - 14.84m
- CH A10500

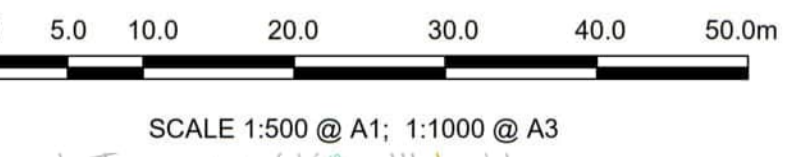
Chainage A10730-A10800 (Both sides)

- Carriageway falls to the left (A10730-A10800).
- No increase in impermeable area.
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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
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	EXISTING COMBINED NETWORK		EXISTING TREE TO BE REMOVED
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	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

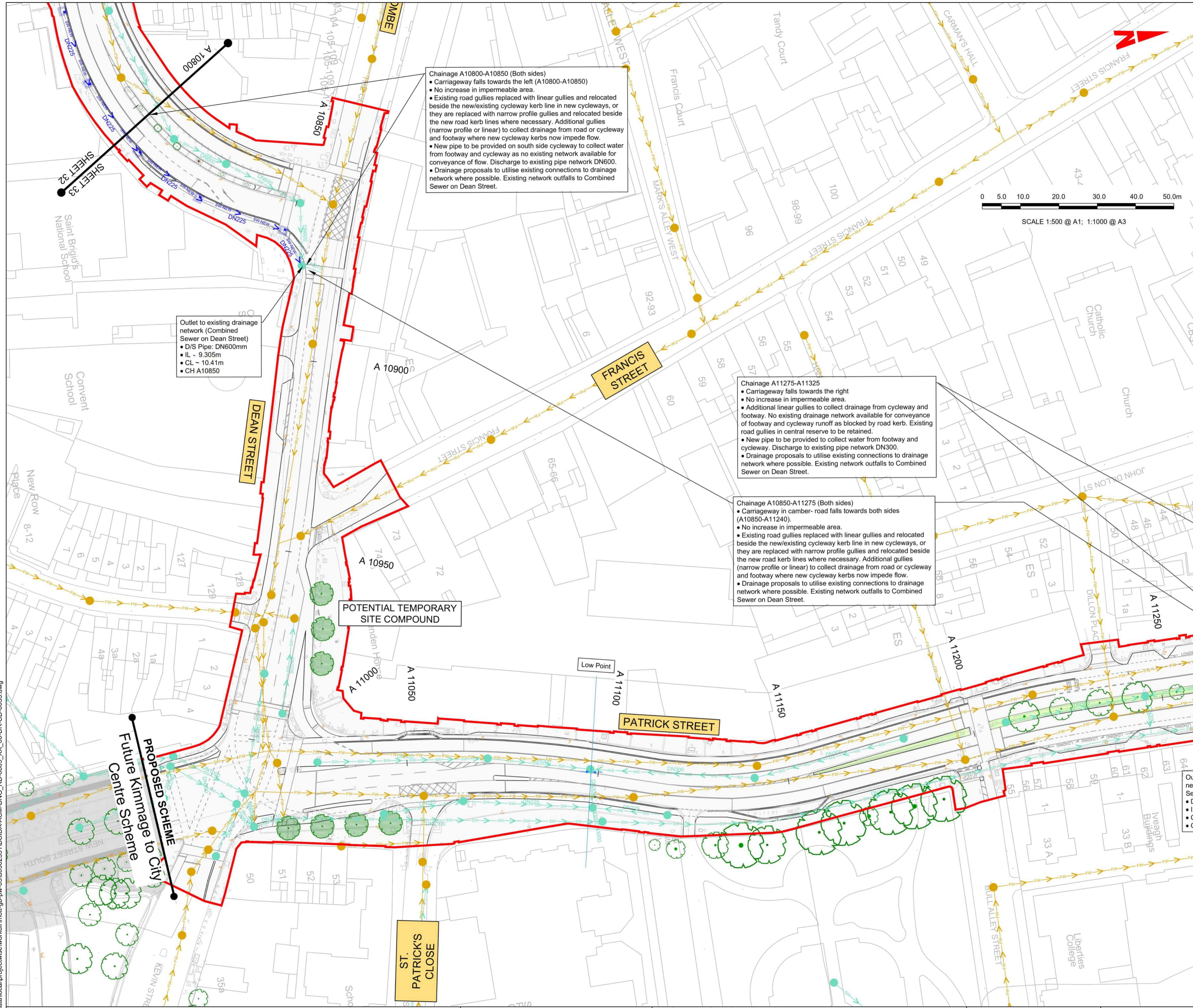
Date: 28/03/23 | Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA | Originator Code: ACM

Drawn: A.FLEMING | Checked: R.LOUGH | Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0032	Sheet Number: 32 of 56	Status: A	Rev: M01

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Chainage A10800-A10850 (Both sides)

- Carriageway falls towards the left (A10800-A10850)
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipe to be provided on south side cycleway to collect water from footway and cycleway as no existing network available for conveyance of flow. Discharge to existing pipe network DN600.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN600mm
- IL - 9.305m
- CL - 10.41m
- CH A10850

Chainage A11275-A11325

- Carriageway falls towards the right
- No increase in impermeable area.
- Additional linear gullies to collect drainage from cycleway and footway. No existing drainage network available for conveyance of footway and cycleway runoff as blocked by road kerb. Existing road gullies in central reserve to be retained.
- New pipe to be provided to collect water from footway and cycleway. Discharge to existing pipe network DN300.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Dean Street.

Chainage A10850-A11275 (Both sides)

- Carriageway in camber- road falls towards both sides (A10850-A11240).
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LEGEND:

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	EXISTING COMBINED WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Project Code: BCIDA
Originator Code: ACM

QMS Code:

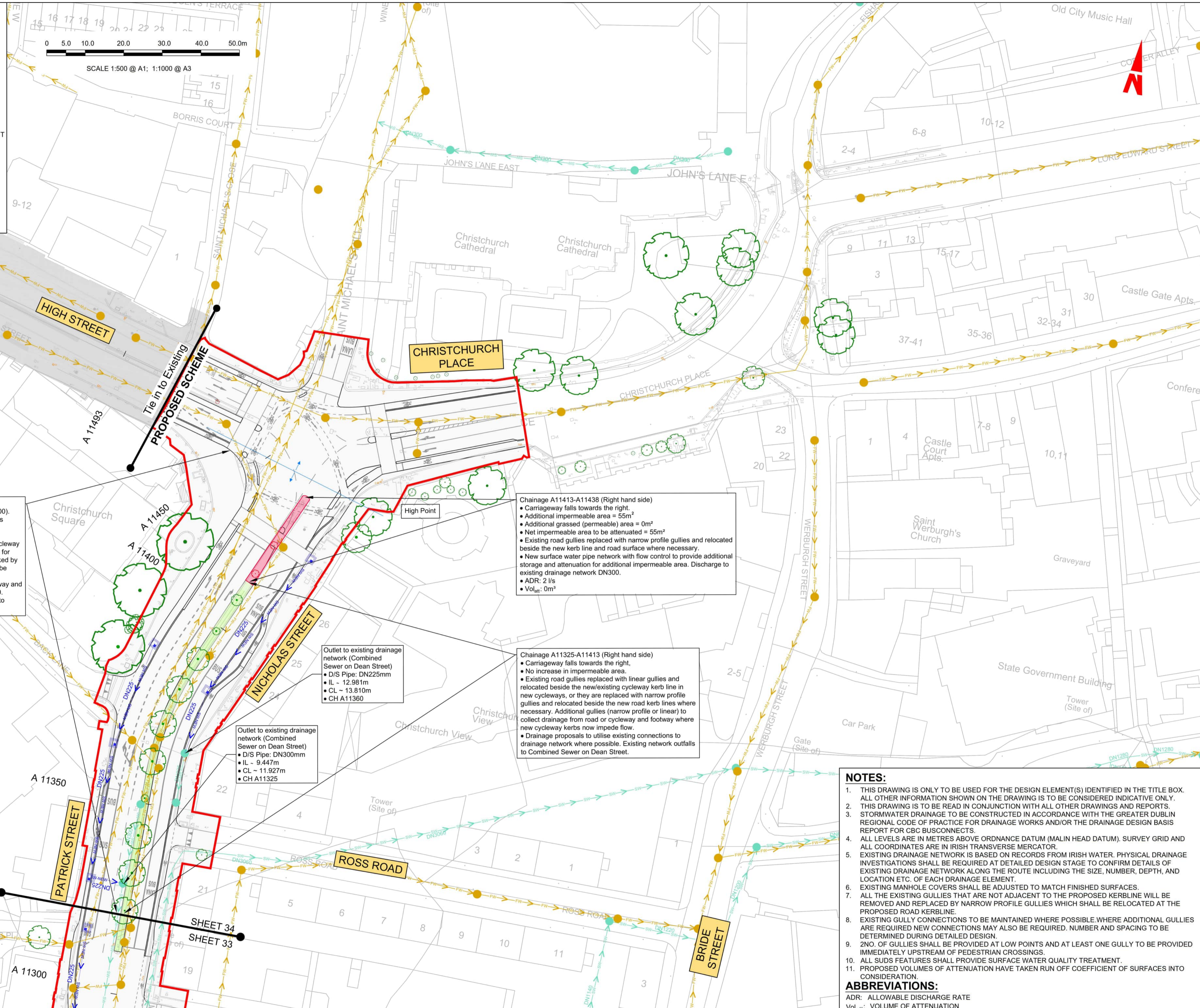
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
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Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0033	Sheet Number: 33 of 56	Status: A	Rev: M01

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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
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- EXISTING COMBINED NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- PROPOSED RODDING EYE
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER
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Chainage A11325-A11438 (Left hand side)

- Carriageway falls towards the right (A11325-A11400). Carriageway in camber- road falls towards both sides (A11400-A11438).
- No increase in impermeable area.
- Additional linear gullies to collect drainage from cycleway and footway. No existing drainage network available for conveyance of footway and cycleway runoff as blocked by road kerb. Existing road gullies in central reserve to be retained.
- New pipe to be provided to collect water from footway and cycleway. Discharge to existing pipe network DN300.
- Drainage proposals to utilise existing connections to drainage network where possible.

Chainage A11413-A11438 (Right hand side)

- Carriageway falls towards the right.
- Additional impermeable area = 55m²
- Additional grassed (permeable) area = 0m²
- Net impermeable area to be attenuated = 55m²
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- New surface water pipe network with flow control to provide additional storage and attenuation for additional impermeable area. Discharge to existing drainage network DN300.
- ADR: 2 I/s
- Vol_{att}: 0m³

Chainage A11325-A11413 (Right hand side)

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- No increase in impermeable area.
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Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN225mm
- IL - 12.981m
- CL - 13.810m
- CH A11360

Outlet to existing drainage network (Combined Sewer on Dean Street)

- D/S Pipe: DN300mm
- IL - 9.447m
- CL - 11.927m
- CH A11325

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Project Ireland 2040
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

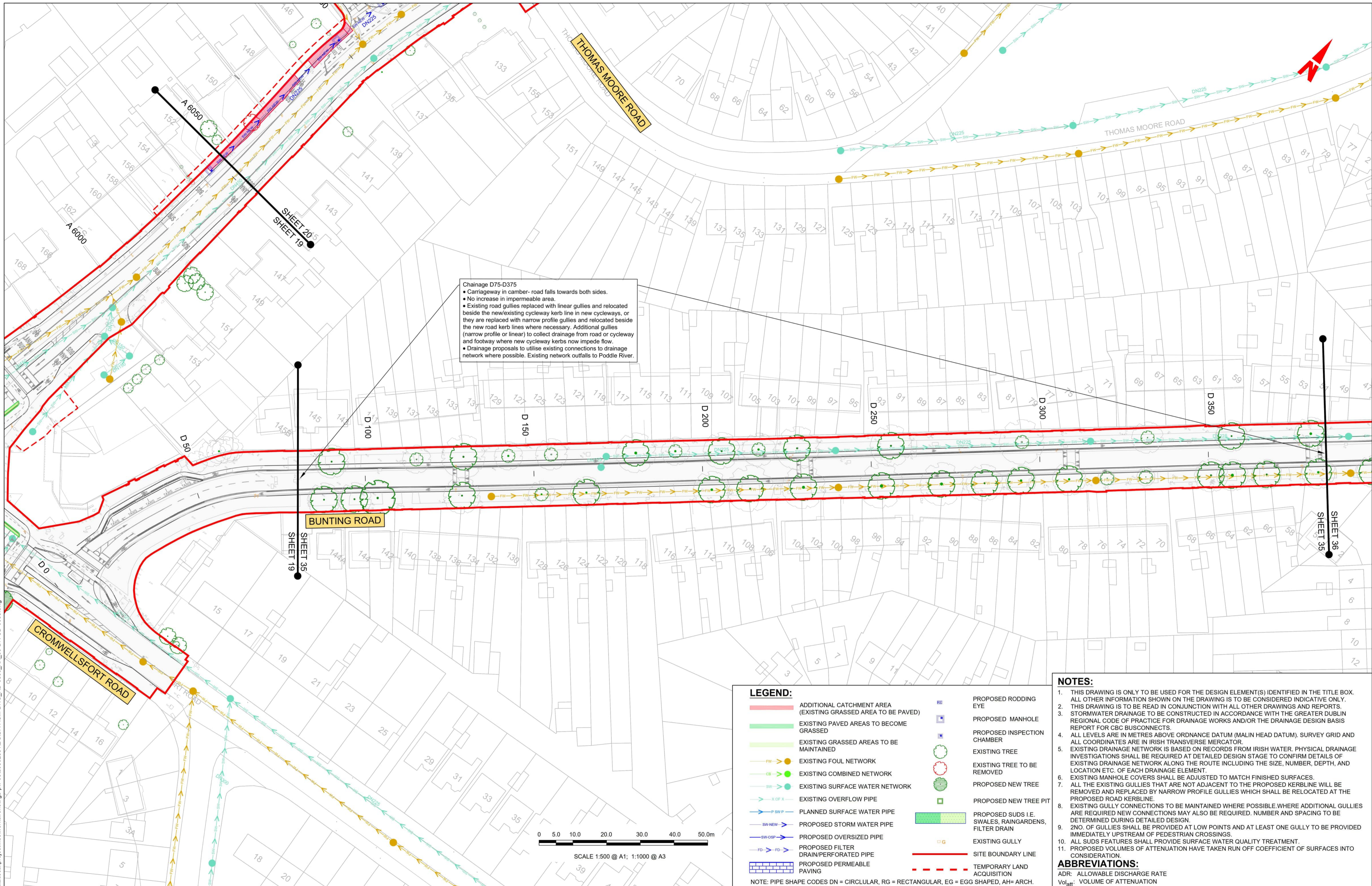
Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0034	Sheet Number: 34 of 56	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Chainage D75-D375

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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 ORDINANCE 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client: **NTA** (Údarás Náisiúnta Iompair National Transport Authority)

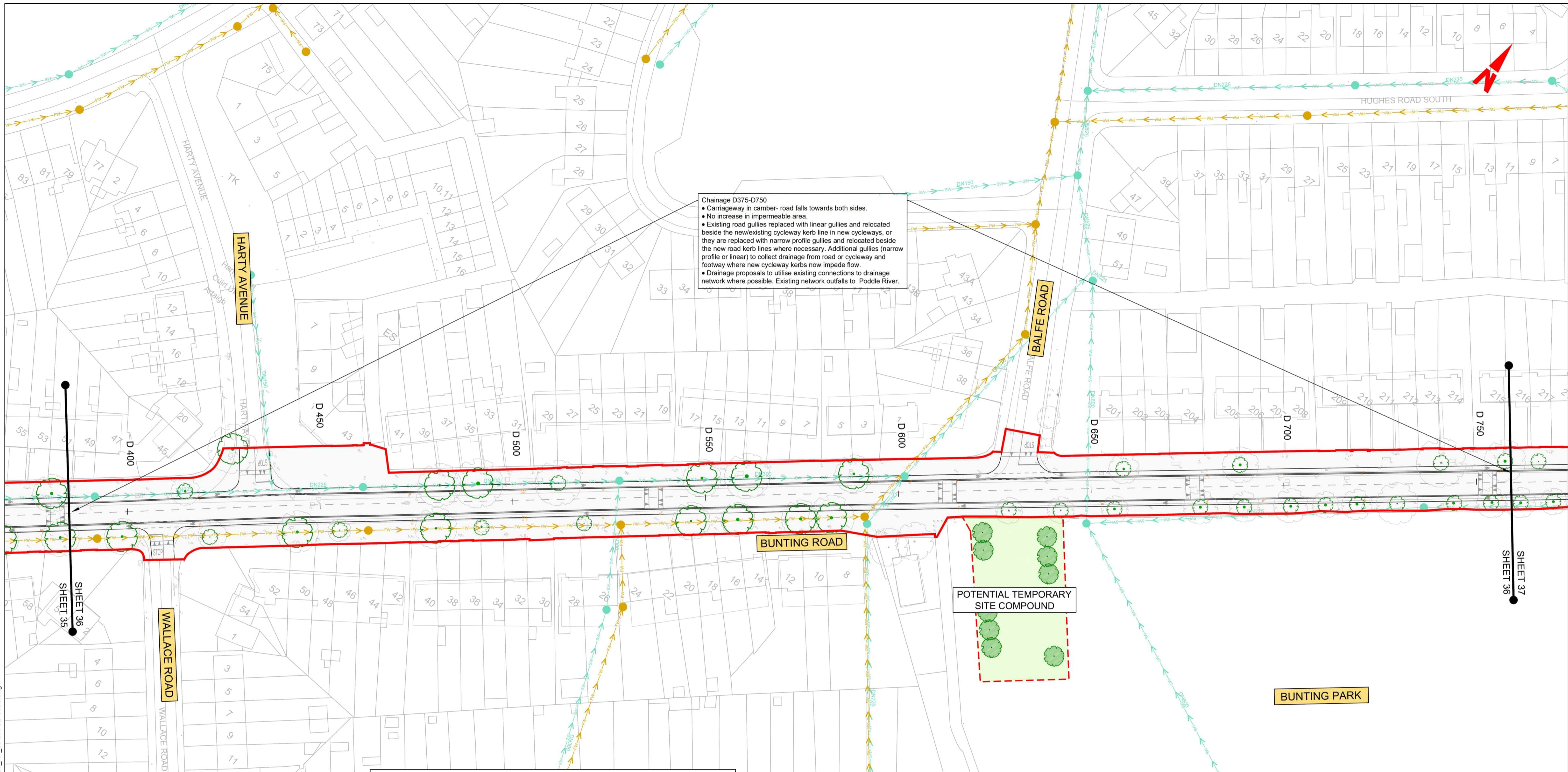
Engineering Designer: **AECOM** (MOTT MACDONALD)

Date: 28/03/23 | Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA | Originator Code: ACM

Drawn: A.FLEMING | Checked: R.LOUGH | Approved: C.ACTON

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0035	Sheet Number: 35 of 56	Status: A	Rev: M01



Chainage D375-D750

- Carriageway in camber road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

NOTES:

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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.
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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.

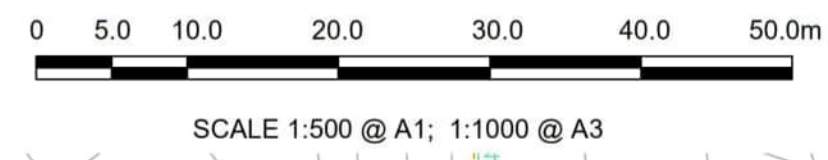
ABBREVIATIONS:

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

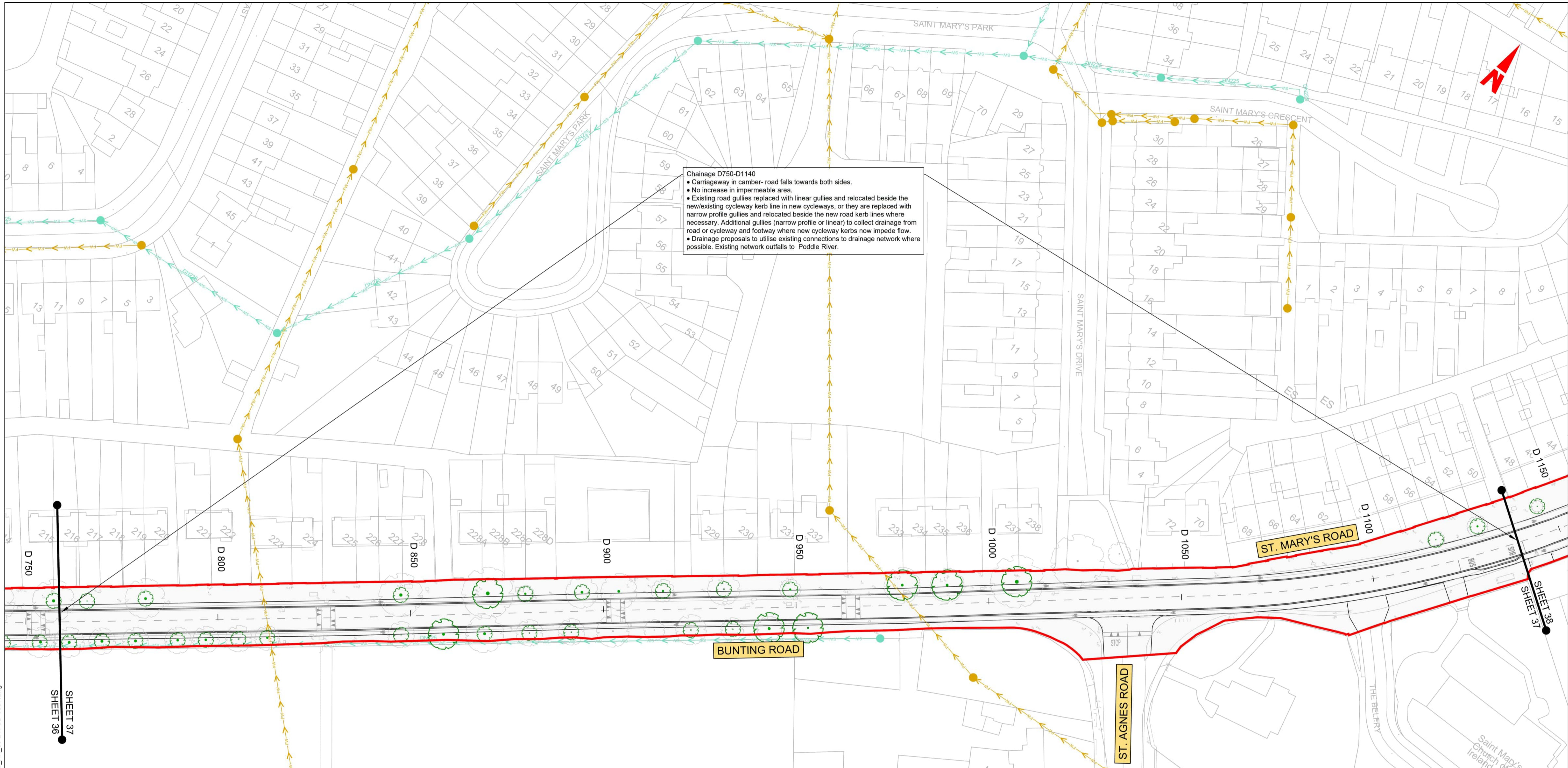
LEGEND:

- | | | | |
|--|---|--|--|
| | 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 NETWORK | | EXISTING TREE TO BE REMOVED |
| | EXISTING SURFACE WATER NETWORK | | PROPOSED NEW TREE |
| | EXISTING OVERFLOW PIPE | | PROPOSED NEW TREE PIT |
| | PLANNED SURFACE WATER PIPE | | 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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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Project Code BCIDA Originator Code ACM QMS Code</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0036</p>		<p>Sheet Number 36 of 56 Status A Rev M01</p>	



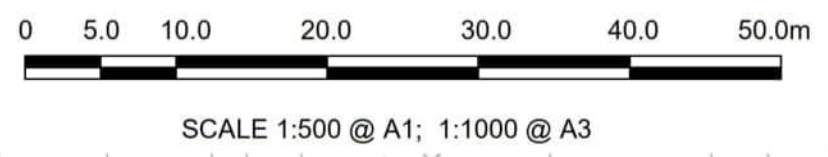
Chainage D750-D1140

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

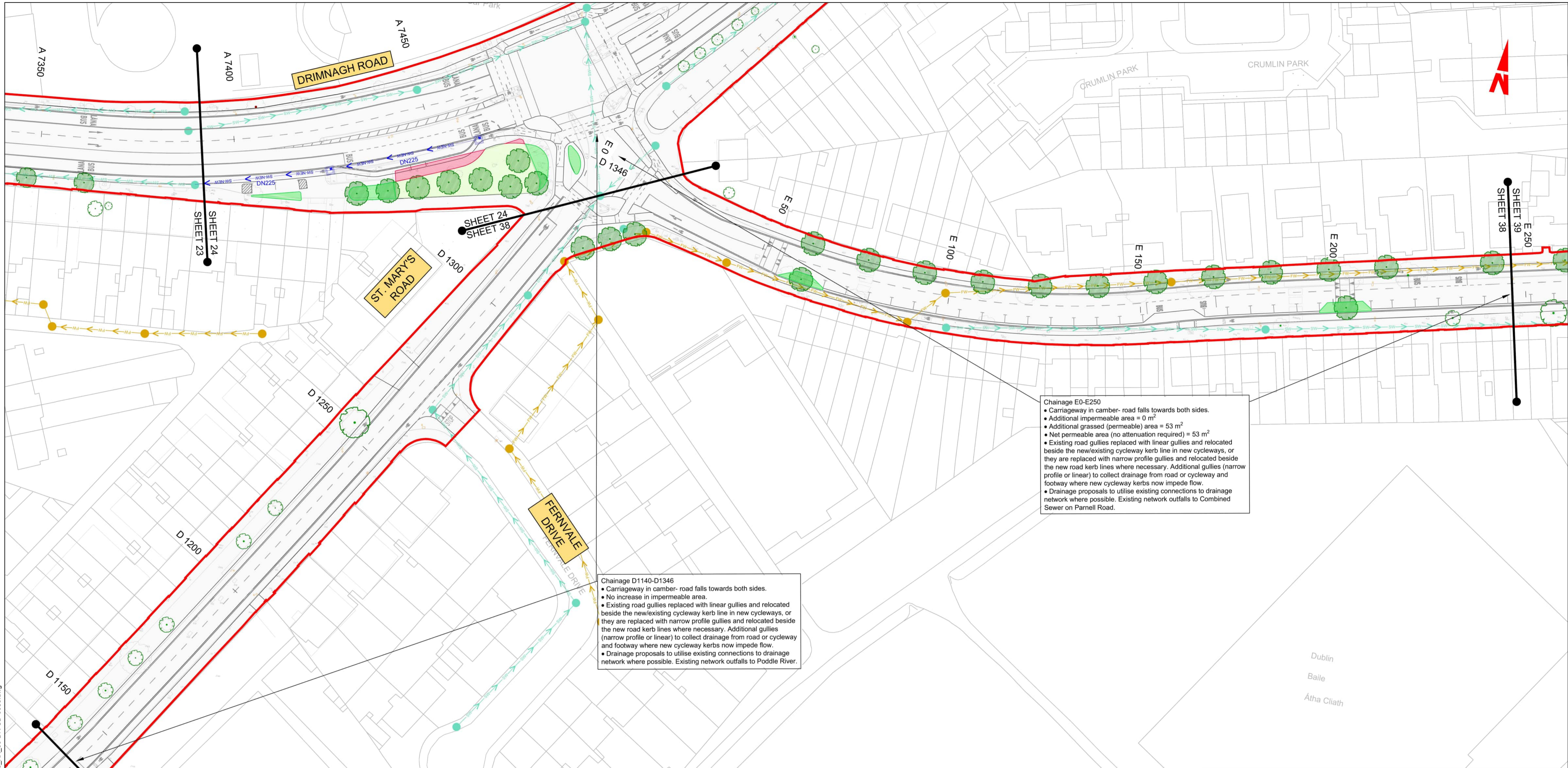
Engineering Designer: **AECOM** **MOTT MACDONALD**

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0037	Sheet Number 37 of 56	Status A	Rev M01



Chainage E0-E250

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 53 m²
- Net permeable area (no attenuation required) = 53 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Parnell Road.

Chainage D1140-D1346

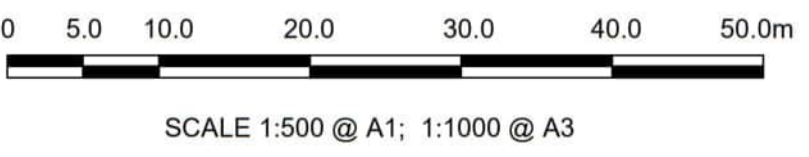
- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Poddle River.

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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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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.



C:\users\jordan.mccilhenny\appdata\local\projectwise\work\drimnagh-gb-pw-03\0302351BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0038.dwg

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3

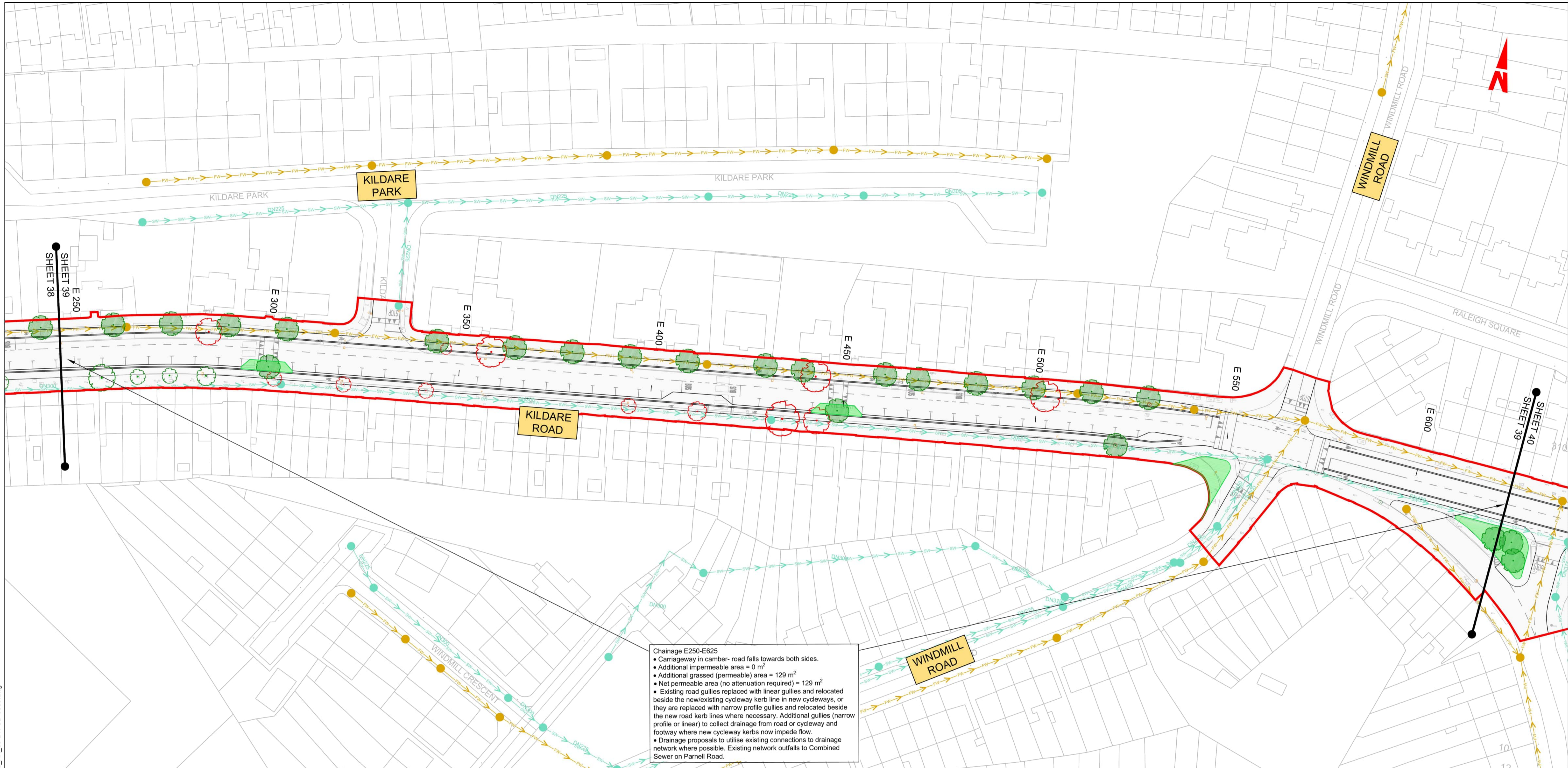
Engineering Designer: **AECOM** MOTT MACDONALD

Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Project Code: BCIDA Originator Code: ACM QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0038	Sheet Number: 38 of 56	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



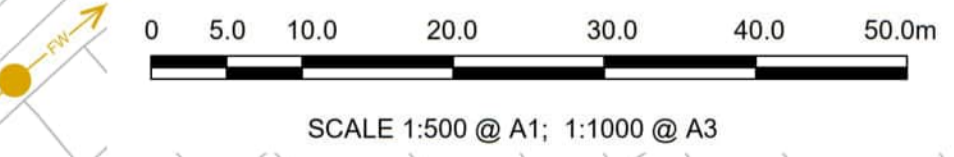
Chainage E250-E625

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 129 m²
- Net permeable area (no attenuation required) = 129 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Parnell Road.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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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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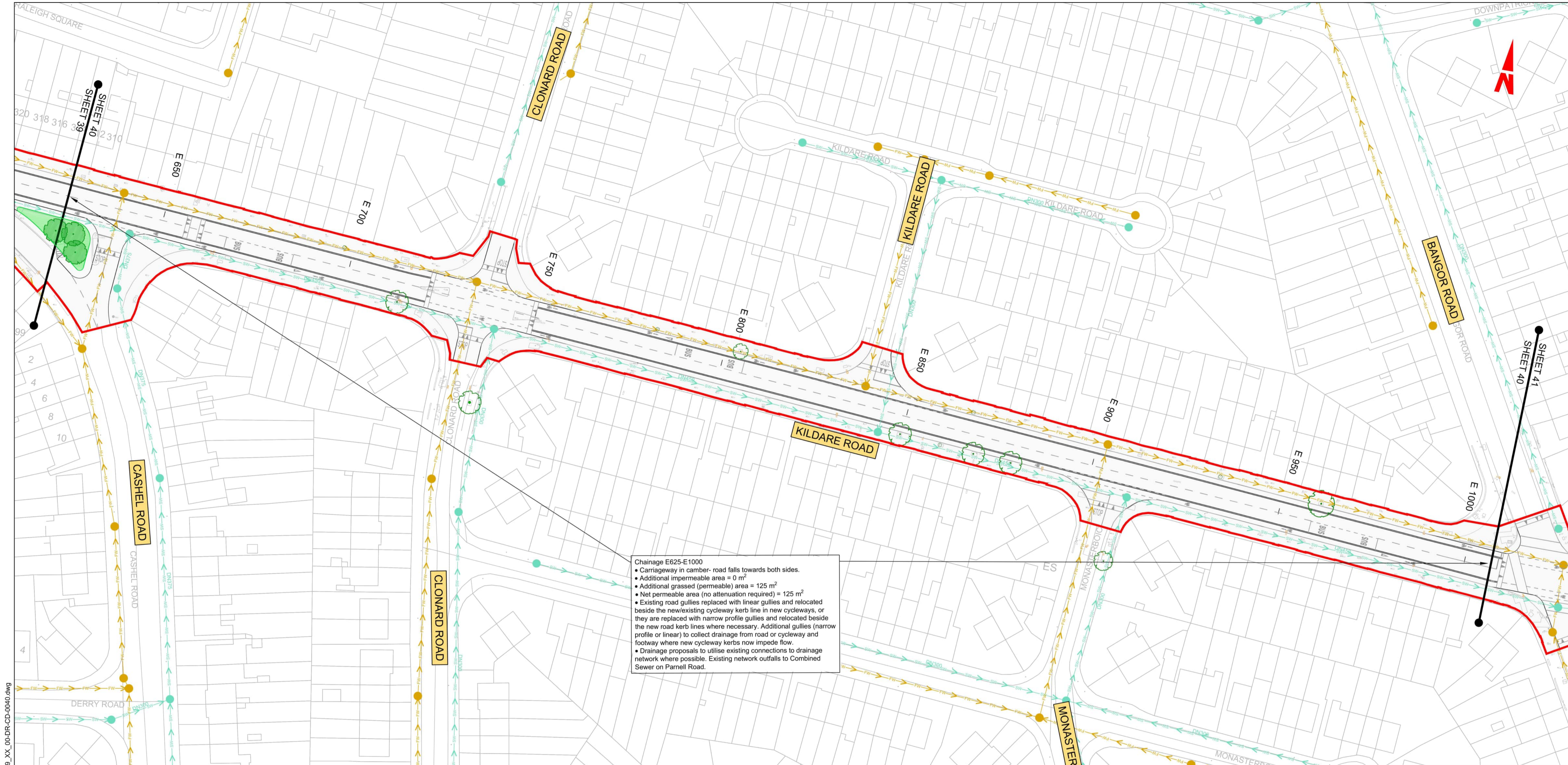
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Rev	Date	Drm	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client NTA Údarás Náisiúnta Iompair National Transport Authority	Engineering Designer AECOM MOTT MACDONALD
Date 28/03/23	Scale 1:500 @ A1 1:1000 @ A3
Project Code BCIDA	Originator Code ACM
Drawn A.FLEMING	Checked R.LOUGH
Approved C.ACTON	

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0039
Sheet Number 39 of 56
Status A
Rev M01



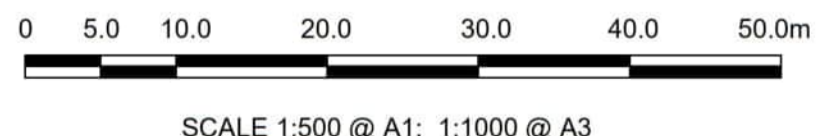
Chainage E625-E1000

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 125 m²
- Net permeable area (no attenuation required) = 125 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Parnell Road.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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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.
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10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
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ABBREVIATIONS:

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

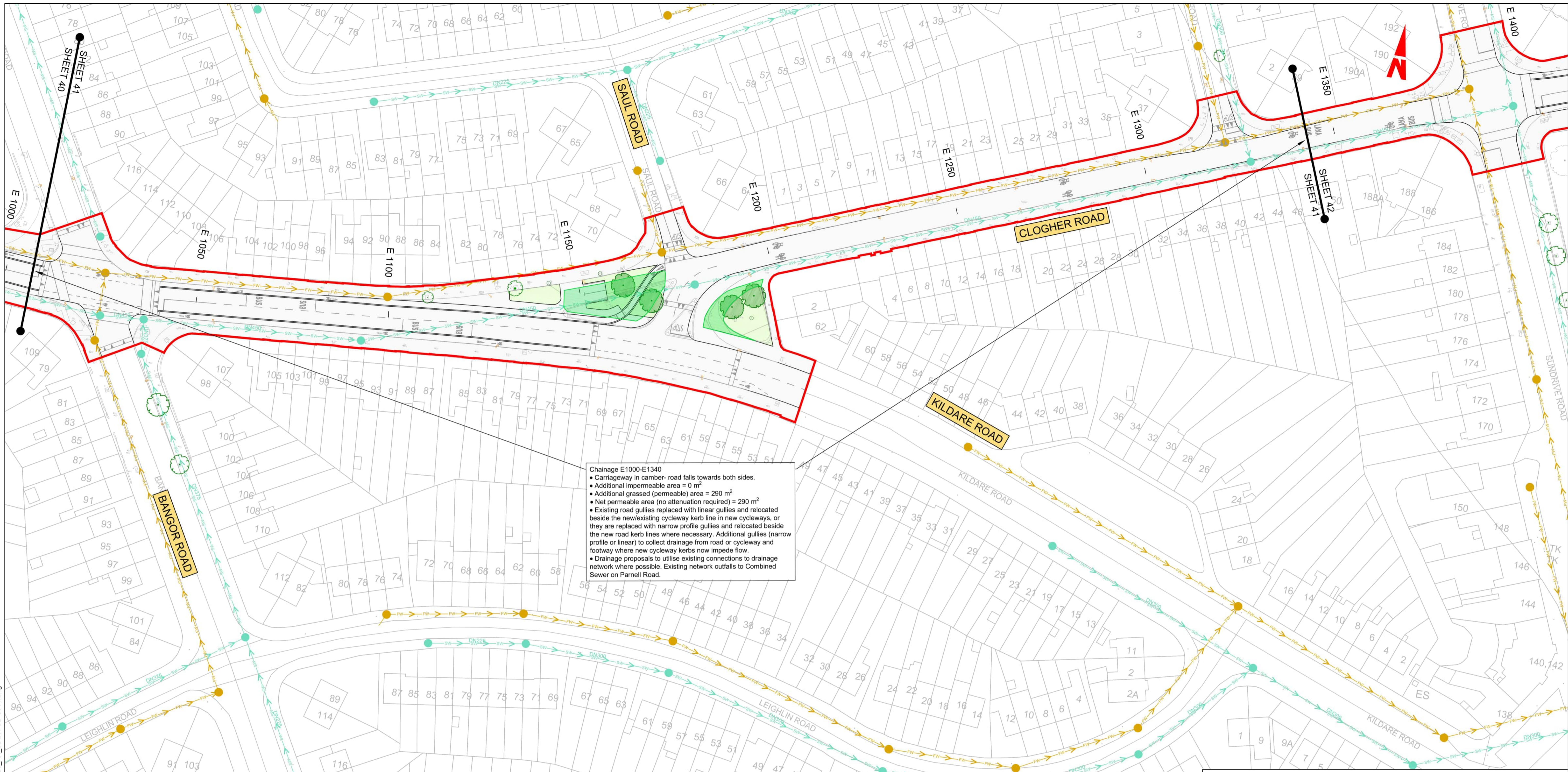
Engineering Designer: **AECOM**, **MOTT MACDONALD**

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING, Checked: R.LOUGH, Approved: C.ACTON

Project Code: BCIDA, Originator Code: ACM, QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0040	Sheet Number: 40 of 56	Status: A	Rev: M01



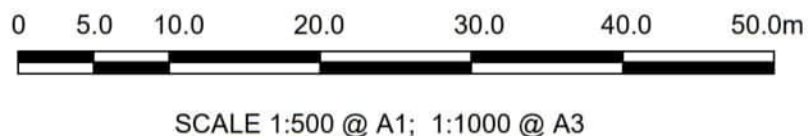
Chainage E1000-E1340

- Carriageway in camber- road falls towards both sides.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 290 m²
- Net permeable area (no attenuation required) = 290 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
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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 CHAMBER |
| | EXISTING GRASSED AREAS TO BE MAINTAINED | | EXISTING TREE |
| | EXISTING FOUL NETWORK | | EXISTING TREE TO BE REMOVED |
| | EXISTING COMBINED NETWORK | | PROPOSED NEW TREE |
| | EXISTING SURFACE WATER NETWORK | | PROPOSED NEW TREE PIT |
| | EXISTING OVERFLOW PIPE | | PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN |
| | PLANNED SURFACE WATER PIPE | | EXISTING GULLY |
| | PROPOSED STORM WATER PIPE | | SITE BOUNDARY LINE |
| | PROPOSED OVERSIZED PIPE | | TEMPORARY LAND ACQUISITION |
| | PROPOSED FILTER DRAIN/PERFORATED PIPE | | |
| | PROPOSED PERMEABLE PAVING | | |

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ABBREVIATIONS:

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

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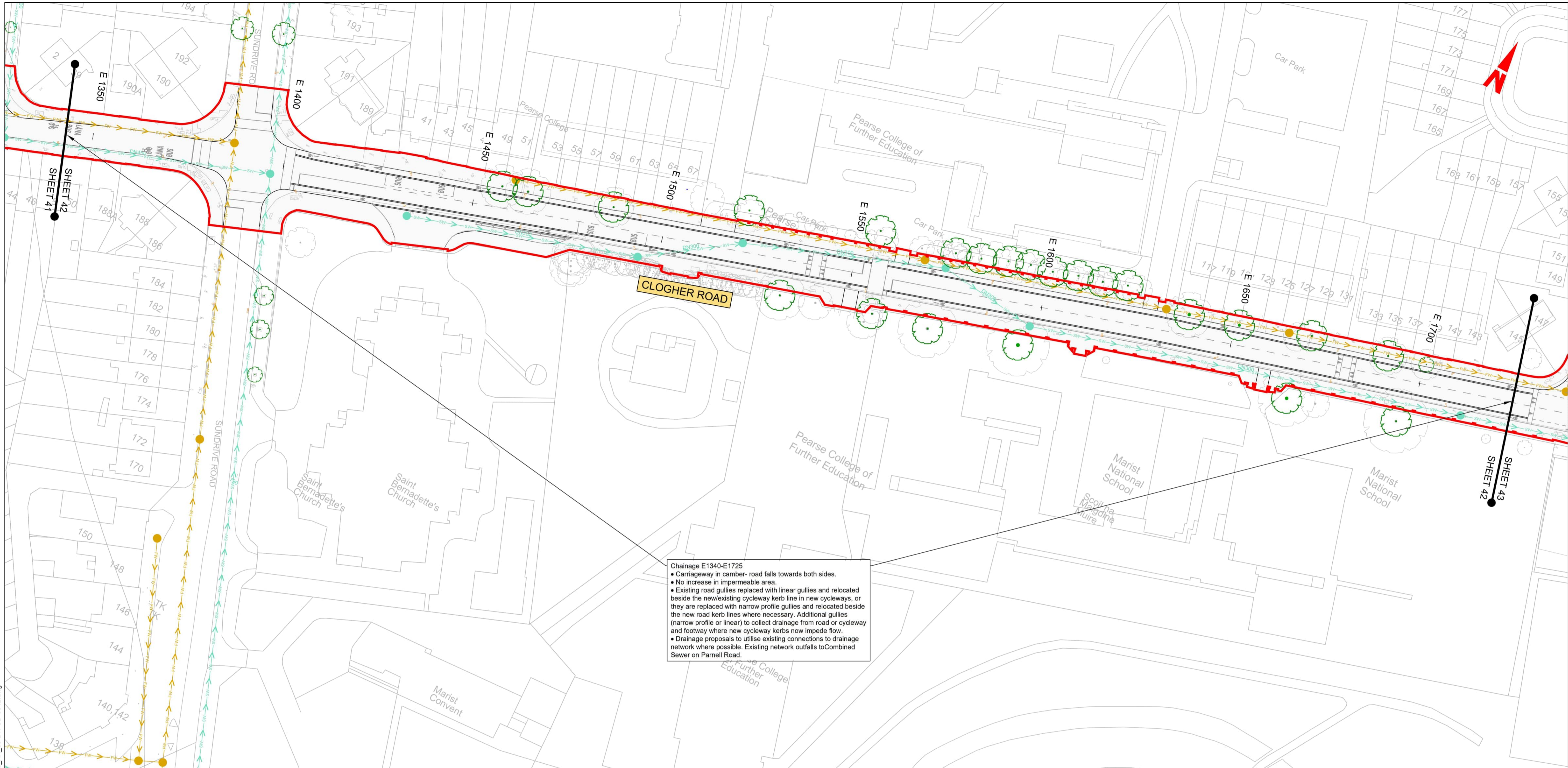


Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client

Engineering Designer

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0041	Sheet Number 41 of 56	Status A	Rev M01



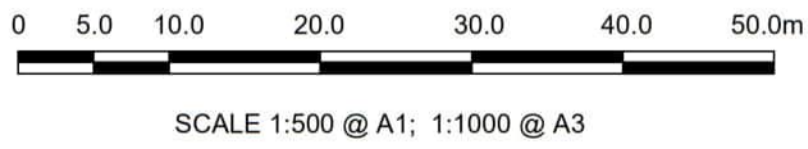
Chainage E1340-E1725

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
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	EXISTING COMBINED NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
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	PLANNED SURFACE WATER PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
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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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client

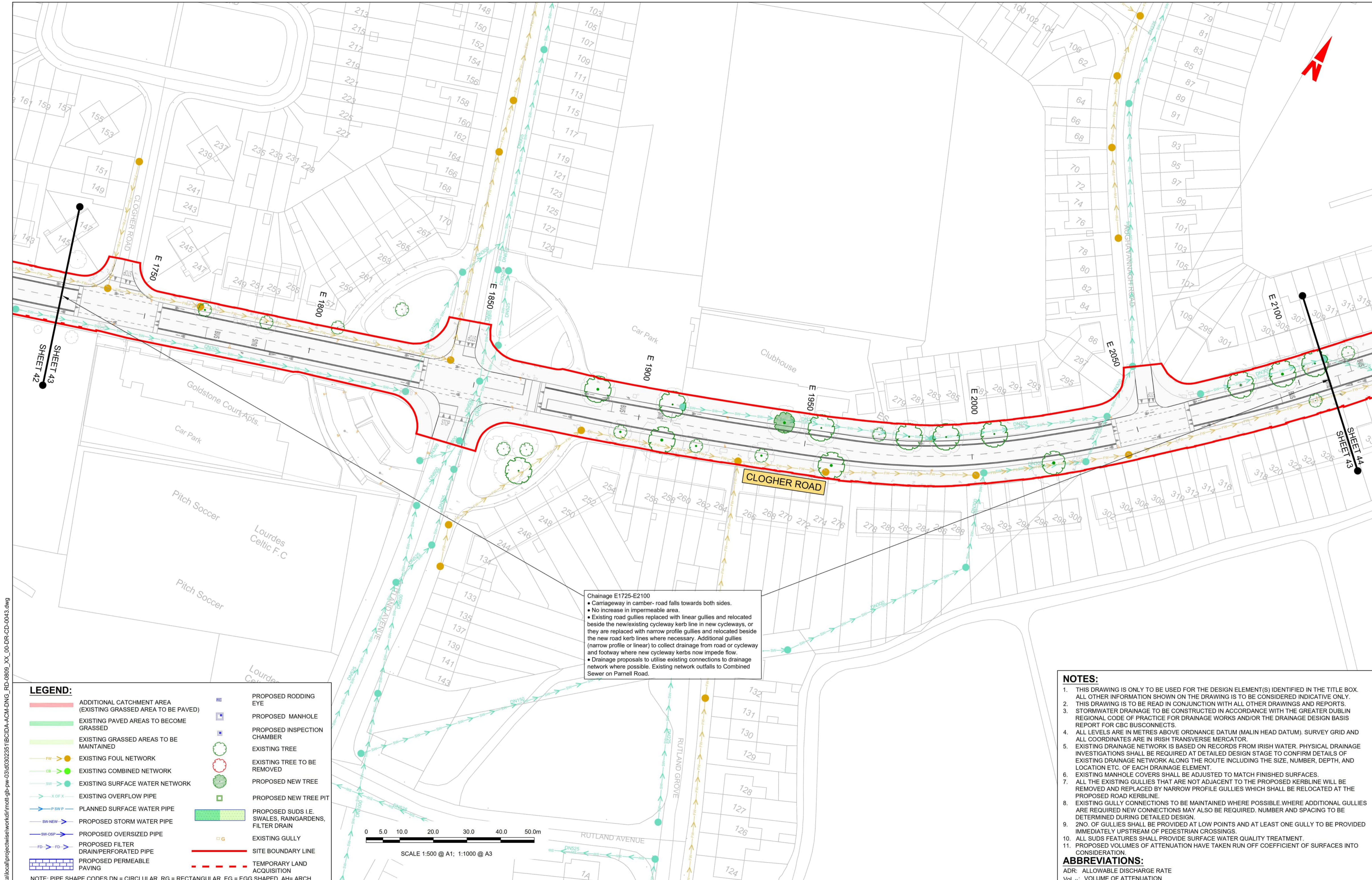
NTA
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer

AECOM

MOTT MACDONALD

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0042	Sheet Number 42 of 56	Status A	Rev M01



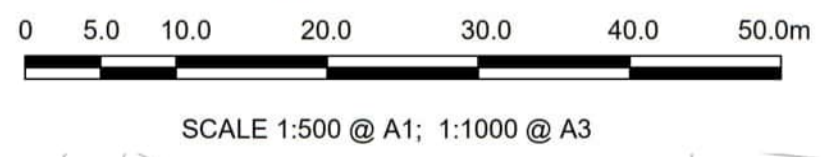
Chainage E1725-E2100

- Carriageway in camber- road falls towards both sides.
- No increase in impermeable area.
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- Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Parnell Road.

LEGEND:

ADDITIONAL CATCHMENT AREA (EXISTING GRASSSED AREA TO BE PAVED)	PROPOSED RODDING EYE
EXISTING PAVED AREAS TO BECOME GRASSSED	PROPOSED MANHOLE
EXISTING GRASSSED AREAS TO BE MAINTAINED	PROPOSED INSPECTION CHAMBER
EXISTING FOUL NETWORK	EXISTING TREE
EXISTING COMBINED NETWORK	EXISTING TREE TO BE REMOVED
EXISTING SURFACE WATER NETWORK	PROPOSED NEW TREE
EXISTING OVERFLOW PIPE	PROPOSED NEW TREE PIT
PLANNED SURFACE WATER PIPE	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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- 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

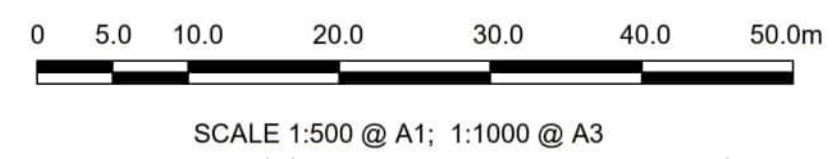
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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p> <p>Project Code BCIDA Originator Code ACM</p>		<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0043</p>		<p>Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>		<p>Sheet Number 43 of 56 Status A Rev M01</p>	

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
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- PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
- EXISTING GULLY
- SITE BOUNDARY LINE
- TEMPORARY LAND ACQUISITION

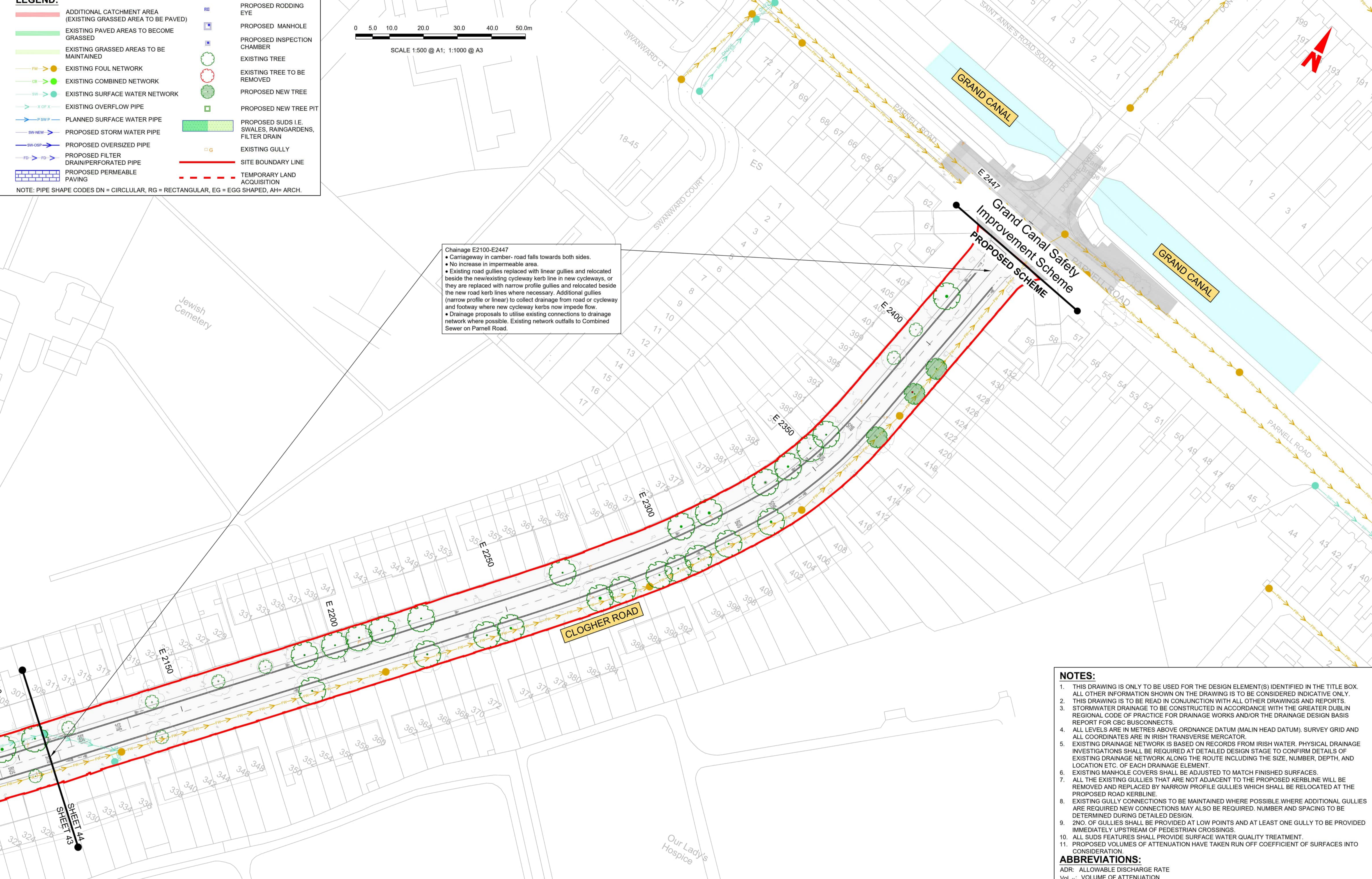
NOTE: PIPE SHAPE CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.



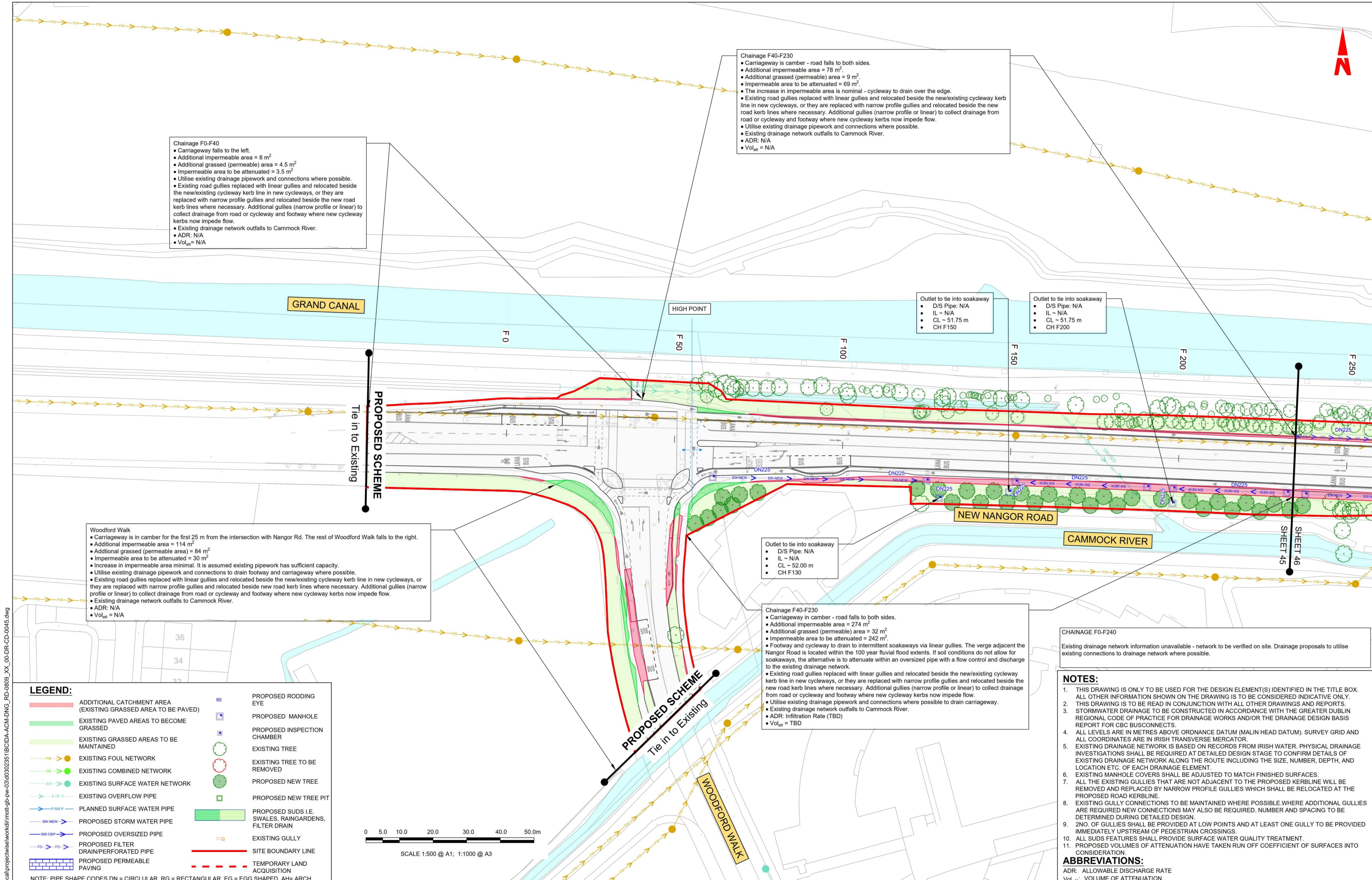
Chainage E2100-E2447
 • Carriageway in camber road falls towards both sides.
 • No increase in impermeable area.
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Drainage proposals to utilise existing connections to drainage network where possible. Existing network outfalls to Combined Sewer on Parnell Road.

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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
 Vol_{att}: VOLUME OF ATTENUATION

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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3 Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Project Code BCIDA Originator Code ACM QMS Code</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0044</p>		<p>Sheet Number 44 of 56 Status A Rev M01</p>		<p>DO NOT SCALE USE FIGURED DIMENSIONS ONLY</p>	



Chainage F0-F40

- Carriageway falls to the left.
- Additional impermeable area = 8 m²
- Additional grassed (permeable) area = 4.5 m²
- Impermeable area to be attenuated = 3.5 m²
- Utilise existing drainage pipework and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Existing drainage network outfalls to Cammock River.
- ADR: N/A
- Vol_{att} = N/A

Chainage F40-F230

- Carriageway is camber - road falls to both sides.
- Additional impermeable area = 78 m².
- Additional grassed (permeable) area = 9 m².
- Impermeable area to be attenuated = 69 m².
- The increase in impermeable area is nominal - cycleway to drain over the edge.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework and connections where possible.
- Existing drainage network outfalls to Cammock River.
- ADR: N/A
- Vol_{att} = N/A

Outlet to tie into soakaway

- D/S Pipe: N/A
- IL ~ N/A
- CL ~ 51.75 m
- CH F150

Outlet to tie into soakaway

- D/S Pipe: N/A
- IL ~ N/A
- CL ~ 51.75 m
- CH F200

Woodford Walk

- Carriageway is in camber for the first 25 m from the intersection with Nangor Rd. The rest of Woodford Walk falls to the right.
- Additional impermeable area = 114 m²
- Additional grassed (permeable) area = 84 m²
- Impermeable area to be attenuated = 30 m²
- Increase in impermeable area minimal. It is assumed existing pipework has sufficient capacity.
- Utilise existing drainage pipework and connections to drain footway and carriageway where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Existing drainage network outfalls to Cammock River.
- ADR: N/A
- Vol_{att} = N/A

Outlet to tie into soakaway

- D/S Pipe: N/A
- IL ~ N/A
- CL ~ 52.00 m
- CH F130

Chainage F40-F230

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 274 m²
- Additional grassed (permeable) area = 32 m²
- Impermeable area to be attenuated = 242 m².
- Footway and cycleway to drain to intermittent soakaways via linear gullies. The verge adjacent the Nangor Road is located within the 100 year fluvial flood extents. If soil conditions do not allow for soakaways, the alternative is to attenuate within an oversized pipe with a flow control and discharge to the existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework and connections where possible to drain carriageway.
- Existing drainage network outfalls to Cammock River.
- ADR: Infiltration Rate (TBD)
- Vol_{att} = TBD

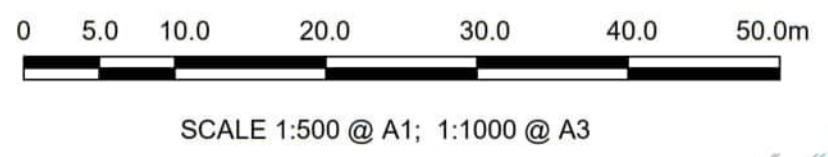
CHAINAGE F0-F240

Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where possible.

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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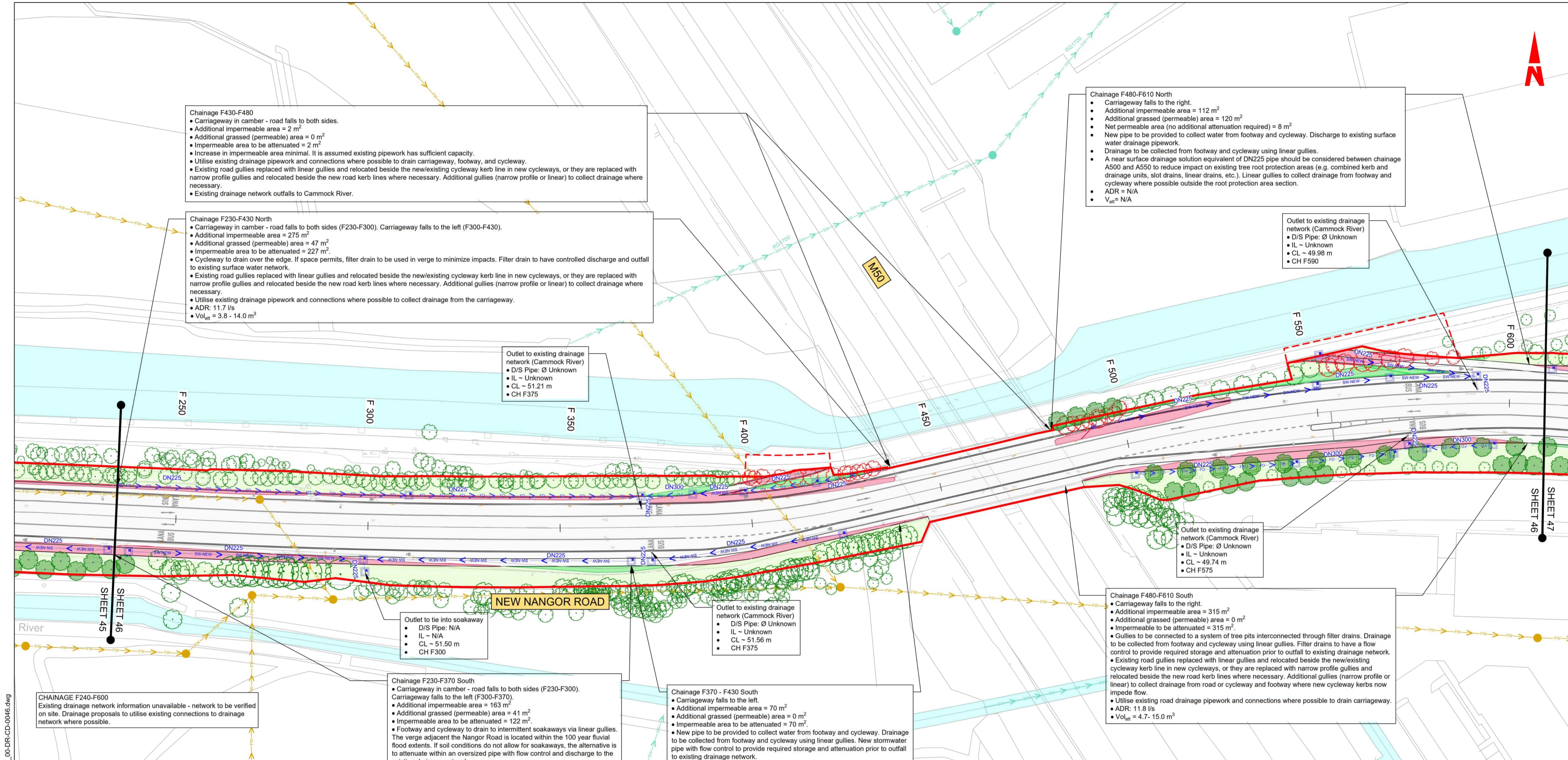
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ABBREVIATIONS:

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

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<p>Project Code: BCIDA</p>					<p>Scale: 1:500 @ A1, 1:1000 @ A3</p>		<p>Date: 28/03/23</p>		<p>Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0045</p>			
<p>Project Code: BCIDA</p>					<p>Originator Code: ACM</p>		<p>Checked: R. LOUGH</p>		<p>Approved: C. ACTON</p>			
<p>Project Code: BCIDA</p>					<p>QMS Code:</p>		<p>Sheet Number: 45 of 56</p>		<p>Status: A</p>			
<p>Project Code: BCIDA</p>					<p>QMS Code:</p>		<p>Rev: M01</p>		<p>DO NOT SCALE USE FIGURED DIMENSIONS ONLY</p>			



Chainage F430-F480

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 2 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 2 m²
- Increase in impermeable area minimal. It is assumed existing pipework has sufficient capacity.
- Utilise existing drainage pipework and connections where possible to drain carriageway, footway, and cycleway.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage where necessary.
- Existing drainage network outfalls to Cammock River.

Chainage F230-F430 North

- Carriageway in camber - road falls to both sides (F230-F300). Carriageway falls to the left (F300-F430).
- Additional impermeable area = 275 m²
- Additional grassed (permeable) area = 47 m²
- Impermeable area to be attenuated = 227 m²
- Cyclway to drain over the edge. If space permits, filter drain to be used in verge to minimize impacts. Filter drain to have controlled discharge and outfall to existing surface water network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage where necessary.
- Utilise existing drainage pipework and connections where possible to collect drainage from the carriageway.
- ADR: 11.7 l/s
- Vol_{att} = 3.8 - 14.0 m³

Chainage F480-F610 North

- Carriageway falls to the right.
- Additional impermeable area = 112 m²
- Additional grassed (permeable) area = 120 m²
- Net permeable area (no additional attenuation required) = 8 m²
- New pipe to be provided to collect water from footway and cycleway. Discharge to existing surface water drainage pipework.
- Drainage to be collected from footway and cycleway using linear gullies.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A500 and A550 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains, etc.). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.
- ADR = N/A
- Vol_{att} = N/A

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 49.98 m
- CH F590

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 51.21 m
- CH F375

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 49.74 m
- CH F575

Outlet to tie into soakaway

- D/S Pipe: N/A
- IL - N/A
- CL - 51.50 m
- CH F300

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 51.56 m
- CH F375

Chainage F480-F610 South

- Carriageway falls to the right.
- Additional impermeable area = 315 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable to be attenuated = 315 m².
- Gullies to be connected to a system of tree pits interconnected through filter drains. Drainage to be collected from footway and cycleway using linear gullies. Filter drains to have a flow control to provide required storage and attenuation prior to outfall to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework and connections where possible to drain carriageway.
- ADR: 11.8 l/s
- Vol_{att} = 4.7 - 15.0 m³

Chainage F230-F370 South

- Carriageway in camber - road falls to both sides (F230-F300). Carriageway falls to the left (F300-F370).
- Additional impermeable area = 163 m²
- Additional grassed (permeable) area = 41 m²
- Impermeable area to be attenuated = 122 m².
- Footway and cycleway to drain to intermittent soakaways via linear gullies. The verge adjacent the Nangor Road is located within the 100 year fluvial flood extents. If soil conditions do not allow for soakaways, the alternative is to attenuate within an oversized pipe with flow control and discharge to the existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework and connections where possible to drain carriageway.
- Existing drainage network outfalls to Cammock River
- ADR: Infiltration Rate (TBD)
- Vol_{att} = TBD

Chainage F370 - F430 South

- Carriageway falls to the left.
- Additional impermeable area = 70 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 70 m².
- New pipe to be provided to collect water from footway and cycleway. Drainage to be collected from footway and cycleway using linear gullies. New stormwater pipe with flow control to provide required storage and attenuation prior to outfall to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework and connections where possible to drain carriageway.
- ADR: 2.9 l/s
- Vol_{att} = 1.0 - 3.6 m³

CHAINAGE F240-F600
Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where possible.

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 NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PLANNED SURFACE WATER PIPE		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 CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH = ARCH.



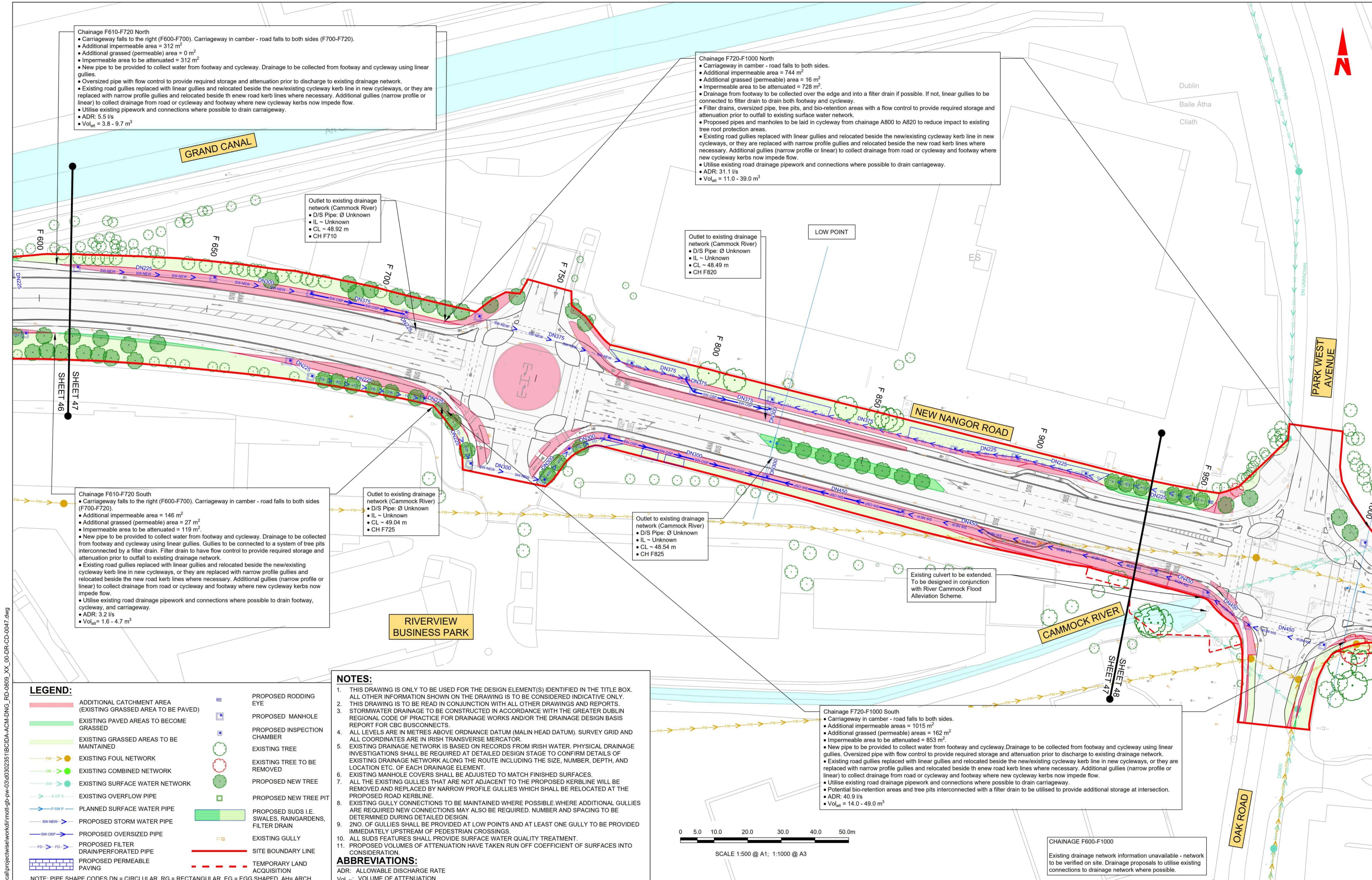
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4. ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM), SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED 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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<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3 Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Project Code BCIDA Originator Code ACM QMS Code</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0046</p>		<p>Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>		<p>Sheet Number 46 of 56 Status A Rev M01</p>	

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Chainage F610-F720 North

- Carriageway falls to the right (F600-F700). Carriageway in camber - road falls to both sides (F700-F720).
- Additional impermeable area = 312 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 312 m²
- New pipe to be provided to collect water from footway and cycleway. Drainage to be collected from footway and cycleway using linear gullies.
- Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing pipework and connections where possible to drain carriageway.
- ADR: 5.5 l/s
- Vol_{att} = 3.8 - 9.7 m³

Chainage F720-F1000 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 744 m²
- Additional grassed (permeable) area = 16 m²
- Impermeable area to be attenuated = 728 m²
- Drainage from footway to be collected over the edge and into a filter drain if possible. If not, linear gullies to be connected to filter drain to drain both footway and cycleway.
- Filter drains, oversized pipe, tree pits, and bio-retention areas with a flow control to provide required storage and attenuation prior to outfall to existing surface water network.
- Proposed pipes and manholes to be laid in cycleway from chainage A800 to A820 to reduce impact to existing tree root protection areas.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework and connections where possible to drain carriageway.
- ADR: 31.1 l/s
- Vol_{att} = 11.0 - 39.0 m³

Chainage F610-F720 South

- Carriageway falls to the right (F600-F700). Carriageway in camber - road falls to both sides (F700-F720).
- Additional impermeable area = 146 m²
- Additional grassed (permeable) area = 27 m²
- Impermeable area to be attenuated = 119 m²
- New pipe to be provided to collect water from footway and cycleway. Drainage to be collected from footway and cycleway using linear gullies. Gullies to be connected to a system of tree pits interconnected by a filter drain. Filter drain to have flow control to provide required storage and attenuation prior to outfall to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework and connections where possible to drain footway, cycleway, and carriageway.
- ADR: 3.2 l/s
- Vol_{att} = 1.6 - 4.7 m³

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 49.04 m
- CH F725

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL - Unknown
- CL - 48.54 m
- CH F825

Chainage F720-F1000 South

- Carriageway in camber - road falls to both sides.
- Additional impermeable areas = 1015 m²
- Additional grassed (permeable) areas = 162 m²
- Impermeable area to be attenuated = 853 m²
- New pipe to be provided to collect water from footway and cycleway. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework and connections where possible to drain carriageway.
- Potential bio-retention areas and tree pits interconnected with a filter drain to be utilised to provide additional storage at intersection.
- ADR: 40.9 l/s
- Vol_{att} = 14.0 - 49.0 m³

CHAINAGE F600-F1000

Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where possible.

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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.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

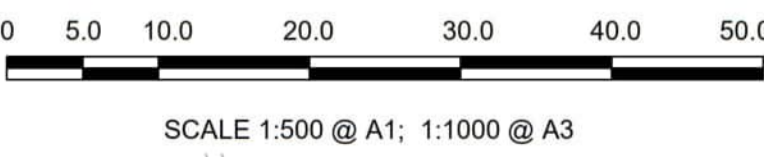
ABBREVIATIONS:

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

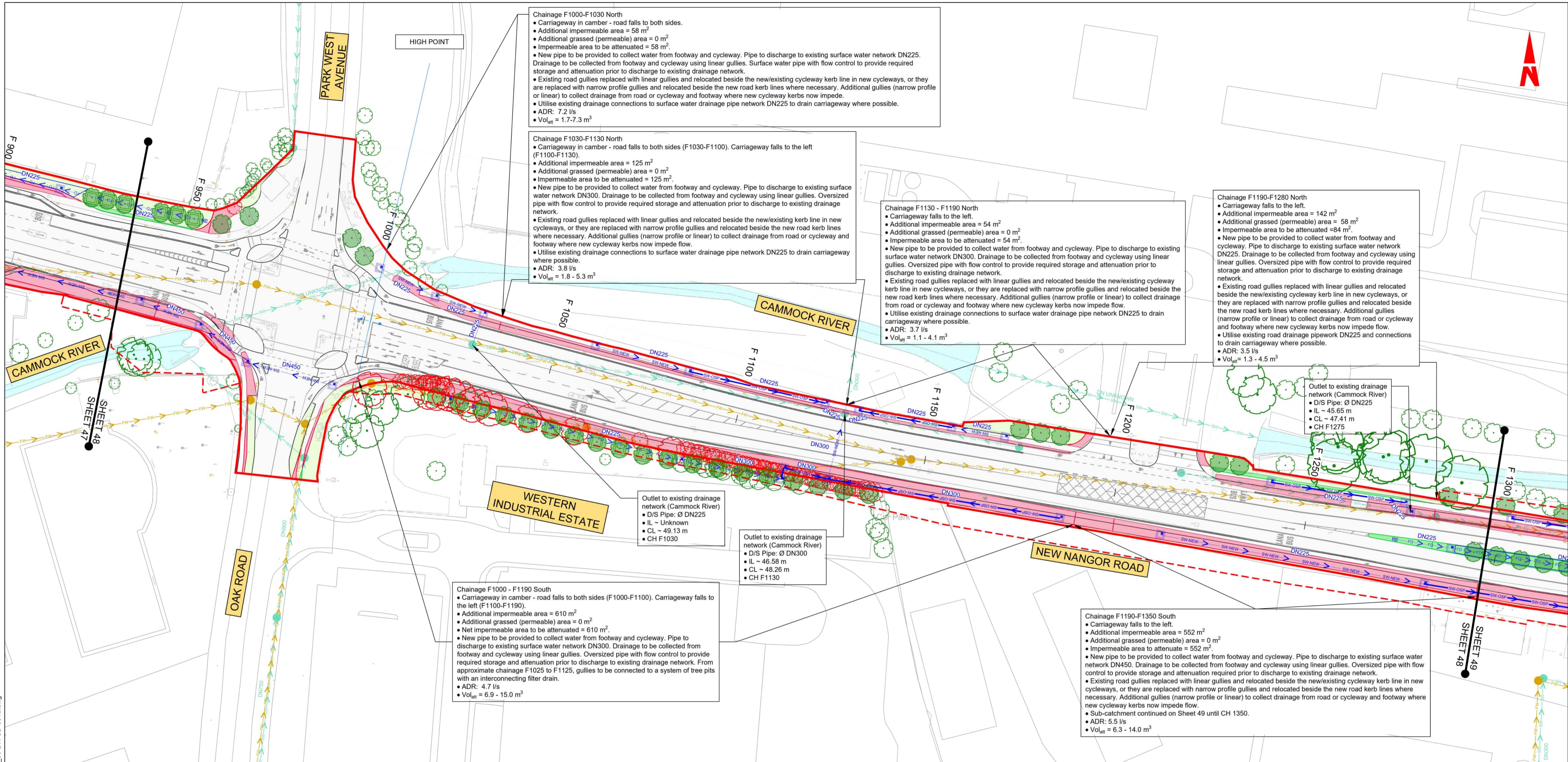
LEGEND:

	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 NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PLANNED SURFACE WATER PIPE		EXISTING GULLY
	PROPOSED STORM WATER PIPE		SITE BOUNDARY LINE
	PROPOSED OVERSIZED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED FILTER DRAIN/PERFORATED PIPE		PROPOSED PERMEABLE PAVING

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<p>Date 28/03/23</p> <p>Scale 1:500 @ A1</p> <p>1:1000 @ A3</p> <p>Drawn A.FLEMING</p> <p>Checked R.LOUGH</p> <p>Approved C.ACTON</p>		<p>Project Code BCIDA</p> <p>Originator Code ACM</p> <p>QMS Code</p>	<p>Drawing File Name</p> <p>BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0047</p>	<p>Drawing Title</p> <p>TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME</p> <p>PROPOSED SURFACE WATER DRAINAGE WORKS</p>	
<p>NOTE: PIPE SHAPE CODING DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH = ARCH.</p>		<p>Sheet Number 47 of 56</p> <p>Status A</p> <p>Rev M01</p>	<p>DO NOT SCALE USE FIGURED DIMENSIONS ONLY</p>		



Chainage F1000-F1030 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 58 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 58 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN225. Drainage to be collected from footway and cycleway using linear gullies. Surface water pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede.
- Utilise existing drainage connections to surface water drainage pipe network DN225 to drain carriageway where possible.
- ADR: 7.2 l/s
- Vol_{att} = 1.7-7.3 m³

Chainage F1030-F1130 North

- Carriageway in camber - road falls to both sides (F1030-F1100). Carriageway falls to the left (F1100-F1130).
- Additional impermeable area = 125 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 125 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN300. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage connections to surface water drainage pipe network DN225 to drain carriageway where possible.
- ADR: 3.8 l/s
- Vol_{att} = 1.8 - 5.3 m³

Chainage F1130 - F1190 North

- Carriageway falls to the left.
- Additional impermeable area = 54 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 54 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN300. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage connections to surface water drainage pipe network DN225 to drain carriageway where possible.
- ADR: 3.7 l/s
- Vol_{att} = 1.1 - 4.1 m³

Chainage F1190-F1280 North

- Carriageway falls to the left.
- Additional impermeable area = 142 m²
- Additional grassed (permeable) area = 58 m²
- Impermeable area to be attenuated = 84 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN225. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework DN225 and connections to drain carriageway where possible.
- ADR: 3.5 l/s
- Vol_{att} = 1.3 - 4.5 m³

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN225
- IL - 45.65 m
- CL - 47.41 m
- CH F1275

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN225
- IL - Unknown
- CL - 49.13 m
- CH F1030

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN300
- IL - 46.58 m
- CL - 48.26 m
- CH F1130

Chainage F1000 - F1190 South

- Carriageway in camber - road falls to both sides (F1000-F1100). Carriageway falls to the left (F1100-F1190).
- Additional impermeable area = 610 m²
- Additional grassed (permeable) area = 0 m²
- Net impermeable area to be attenuated = 610 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN300. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network. From approximate chainage F1025 to F1125, gullies to be connected to a system of tree pits with an interconnecting filter drain.
- ADR: 4.7 l/s
- Vol_{att} = 6.9 - 15.0 m³

Chainage F1190-F1350 South

- Carriageway falls to the left.
- Additional impermeable area = 552 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 552 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN450. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide storage and attenuation required prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Sub-catchment continued on Sheet 49 until CH 1350.
- ADR: 5.5 l/s
- Vol_{att} = 6.3 - 14.0 m³

NOTES:

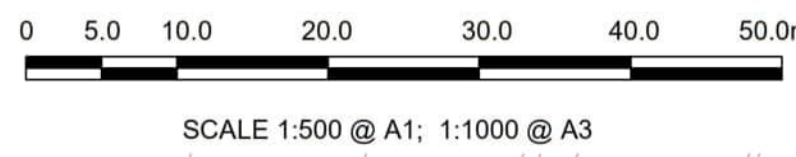
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2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR 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

LEGEND:

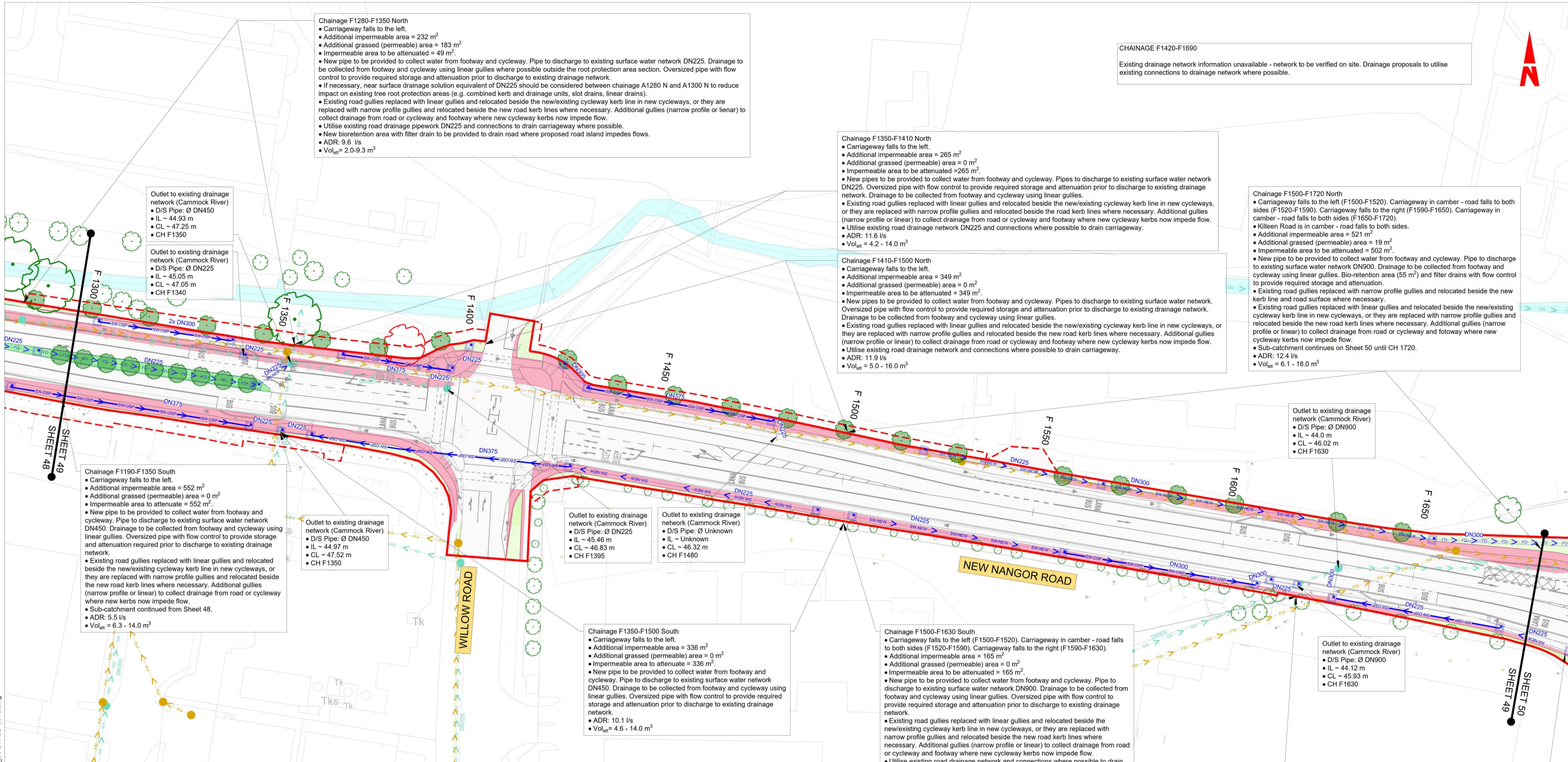
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE CHAMBER
	EXISTING GRASSED AREAS TO BE MAINTAINED		EXISTING TREE
	EXISTING FOUL NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING COMBINED NETWORK		PROPOSED NEW TREE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

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



<p>Project Ireland 2040 Building Ireland's Future</p>		<p>NTA Údarás Náisiúnta Iompair National Transport Authority</p>		<p>AECOM MOTT MACDONALD</p>		<p>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p>		
<p>Rev M01 Date 28/03/23 Drm AF Chk'd RL App'd CA Description ISSUE FOR PHASE 4: PLANNING</p>	<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p>	<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>	<p>Project Code BCIDA Originator Code ACM</p>	<p>QMS Code</p>	<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0048</p>	<p>Sheet Number 48 of 56</p>	<p>Status A</p>	<p>Rev M01</p>

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Chainage F1280-F1350 North

- Carriageway falls to the left.
- Additional impermeable area = 232 m²
- Additional grassed (permeable) area = 183 m²
- Impermeable area to be attenuated = 49 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN225. Drainage to be collected from footway and cycleway using linear gullies where possible outside the root protection area section. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- If necessary, near surface drainage solution equivalent of DN225 should be considered between chainage A1280 N and A1300 N to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains).
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework DN225 and connections to drain carriageway where possible.
- New bioretention area with filter drain to be provided to drain road where proposed road island impedes flows.
- ADR: 9.6 l/s
- Vol_{att} = 2.0-9.3 m³

CHAINAGE F1420-F1690

Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where possible.

Chainage F1350-F1410 North

- Carriageway falls to the left.
- Additional impermeable area = 265 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 265 m²
- New pipes to be provided to collect water from footway and cycleway. Pipes to discharge to existing surface water network DN225. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network. Drainage to be collected from footway and cycleway using linear gullies.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network DN225 and connections where possible to drain carriageway.
- ADR: 11.6 l/s
- Vol_{att} = 4.2 - 14.0 m³

Chainage F1500-F1720 North

- Carriageway falls to the left (F1500-F1520). Carriageway in camber - road falls to both sides (F1520-F1590). Carriageway falls to the right (F1590-F1650). Carriageway in camber - road falls to both sides (F1650-F1720).
- Killen Road is in camber - road falls to both sides.
- Additional impermeable area = 521 m²
- Additional grassed (permeable) area = 19 m²
- Impermeable area to be attenuated = 502 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN900. Drainage to be collected from footway and cycleway using linear gullies. Bio-retention area (55 m²) and filter drains with flow control to provide required storage and attenuation.
- Existing road gullies replaced with narrow profile gullies and relocated beside the new kerb line and road surface where necessary.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Sub-catchment continues on Sheet 50 until CH 1720.
- ADR: 12.4 l/s
- Vol_{att} = 6.1 - 18.0 m³

Chainage F1410-F1500 North

- Carriageway falls to the left.
- Additional impermeable area = 349 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 349 m²
- New pipes to be provided to collect water from footway and cycleway. Pipes to discharge to existing surface water network. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network. Drainage to be collected from footway and cycleway using linear gullies.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network and connections where possible to drain carriageway.
- ADR: 11.9 l/s
- Vol_{att} = 5.0 - 16.0 m³

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN450
- IL ~ 44.93 m
- CL ~ 47.25 m
- CH F1350

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN225
- IL ~ 45.05 m
- CL ~ 47.05 m
- CH F1340

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN900
- IL ~ 44.0 m
- CL ~ 46.02 m
- CH F1630

Chainage F1190-F1350 South

- Carriageway falls to the left.
- Additional impermeable area = 552 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 552 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN450. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide storage and attenuation required prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway where new kerbs now impede flow.
- Sub-catchment continued from Sheet 48.
- ADR: 5.5 l/s
- Vol_{att} = 6.3 - 14.0 m³

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN450
- IL ~ 44.97 m
- CL ~ 47.52 m
- CH F1350

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN225
- IL ~ 45.46 m
- CL ~ 46.83 m
- CH F1395

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø Unknown
- IL ~ Unknown
- CL ~ 46.32 m
- CH F1480

Chainage F1350-F1500 South

- Carriageway falls to the left.
- Additional impermeable area = 336 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 336 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN450. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- ADR: 10.1 l/s
- Vol_{att} = 4.6 - 14.0 m³

Chainage F1500-F1630 South

- Carriageway falls to the left (F1500-F1520). Carriageway in camber - road falls to both sides (F1520-F1590). Carriageway falls to the right (F1590-F1630).
- Additional impermeable area = 165 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 165 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN900. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network and connections where possible to drain carriageway.
- ADR: 8.3 l/s
- Vol_{att} = 2.8 - 10.0 m³

Outlet to existing drainage network (Cammock River)

- D/S Pipe: Ø DN900
- IL ~ 44.12 m
- CL ~ 45.93 m
- CH F1630

Chainage F1630-F1700 South

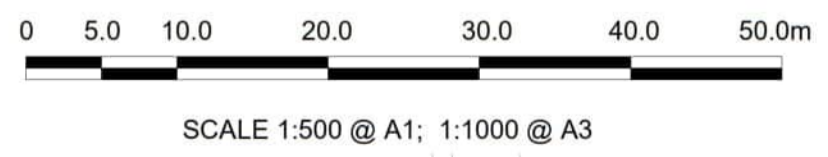
- Carriageway falls to the right (F1630-F1650). Carriageway in camber - road falls to both sides (F1650-F1700).
- Additional impermeable area = 71 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 71 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN900. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network and connections where possible to drain carriageway.
- ADR: 4.2 l/s
- Vol_{att} = 1.2 - 4.8 m³

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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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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 CODING DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.



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b. This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.

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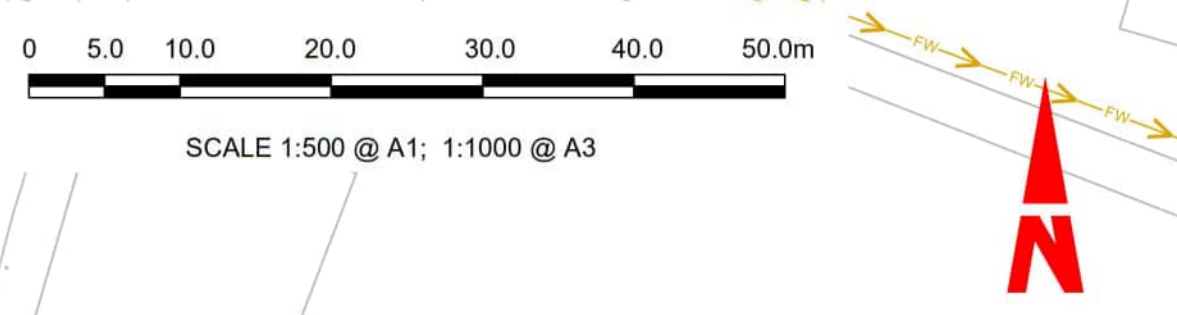
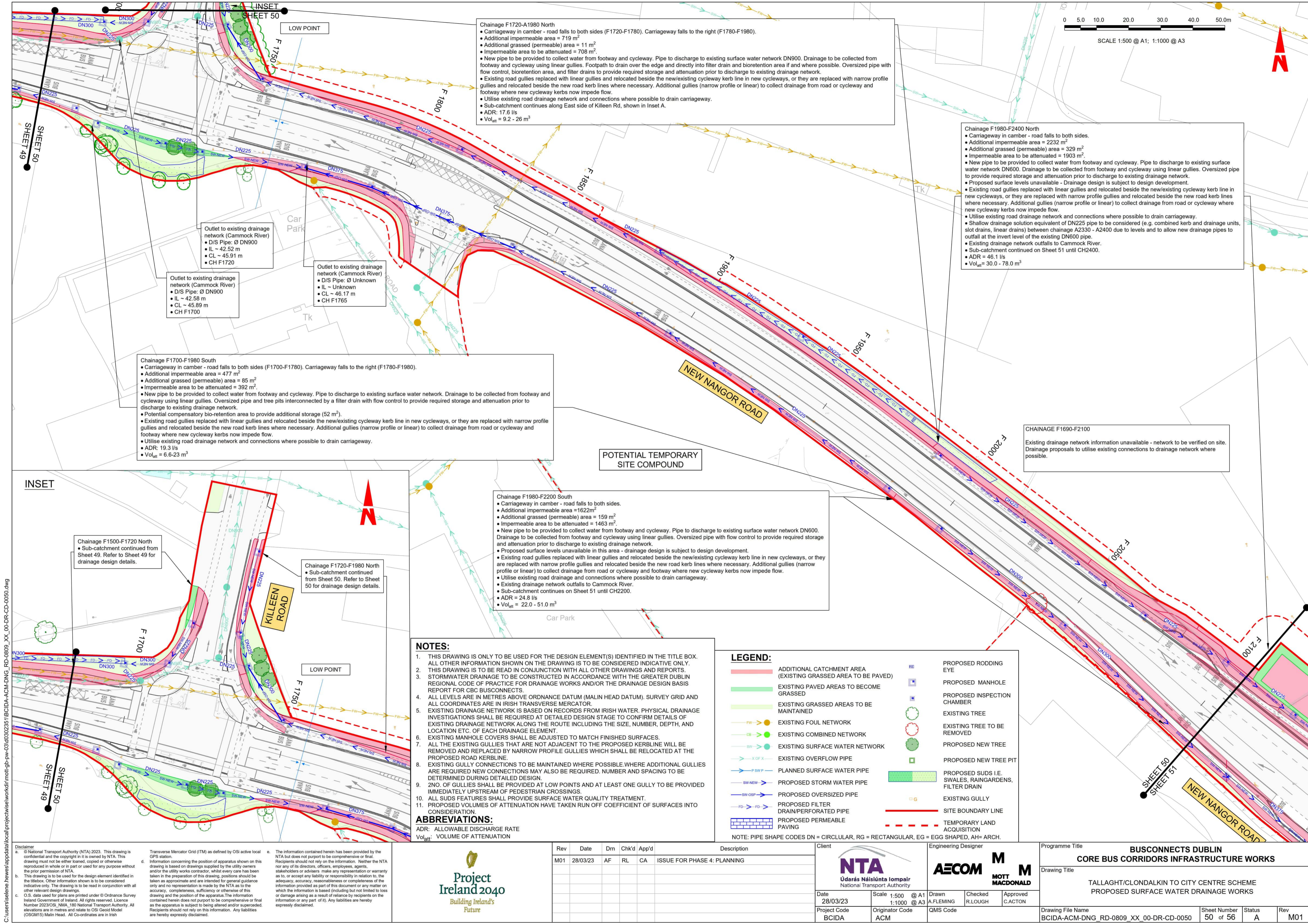
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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client	Engineering Designer	Programme Title		
NTA Údárás Náisiúnta Iompair National Transport Authority	AECOM MOTT MACDONALD	BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS		
Date	Scale	Drawn	Checked	Approved
28/03/23	1:500 @ A1 1:1000 @ A3	A.FLEMING	R.LOUGH	C.ACTON
Project Code	Originator Code	QMS Code		
BCIDA	ACM			
Drawing File Name	Sheet Number	Status	Rev	
BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0049	49 of 56	A	M01	

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Chainage F1720-A1980 North

- Carriageway in camber - road falls to both sides (F1720-F1780). Carriageway falls to the right (F1780-F1980).
- Additional impermeable area = 719 m²
- Additional grassed (permeable) area = 11 m²
- Impermeable area to be attenuated = 708 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN900. Drainage to be collected from footway and cycleway using linear gullies. Footpath to drain over the edge and directly into filter drain and bioretention area if and where possible. Oversized pipe with flow control, bioretention area, and filter drains to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network and connections where possible to drain carriageway.
- Sub-catchment continues along East side of Killeen Rd, shown in Inset A.
- ADR: 17.6 l/s
- Vol_{att} = 9.2 - 26 m³

Chainage F1980-F2400 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 2232 m²
- Additional grassed (permeable) area = 329 m²
- Impermeable area to be attenuated = 1903 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN600. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe to provide required storage and attenuation prior to discharge to existing drainage network.
- Proposed surface levels unavailable - Drainage design is subject to design development.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network and connections where possible to drain carriageway.
- Shallow drainage solution equivalent of DN225 pipe to be considered (e.g. combined kerb and drainage units, slot drains, linear drains) between chainage A2330 - A2400 due to levels and to allow new drainage pipes to outfall at the invert level of the existing DN600 pipe.
- Existing drainage network outfalls to Cammock River.
- Sub-catchment continued on Sheet 51 until CH2400.
- ADR = 46.1 l/s
- Vol_{att} = 30.0 - 78.0 m³

Chainage F1700-F1980 South

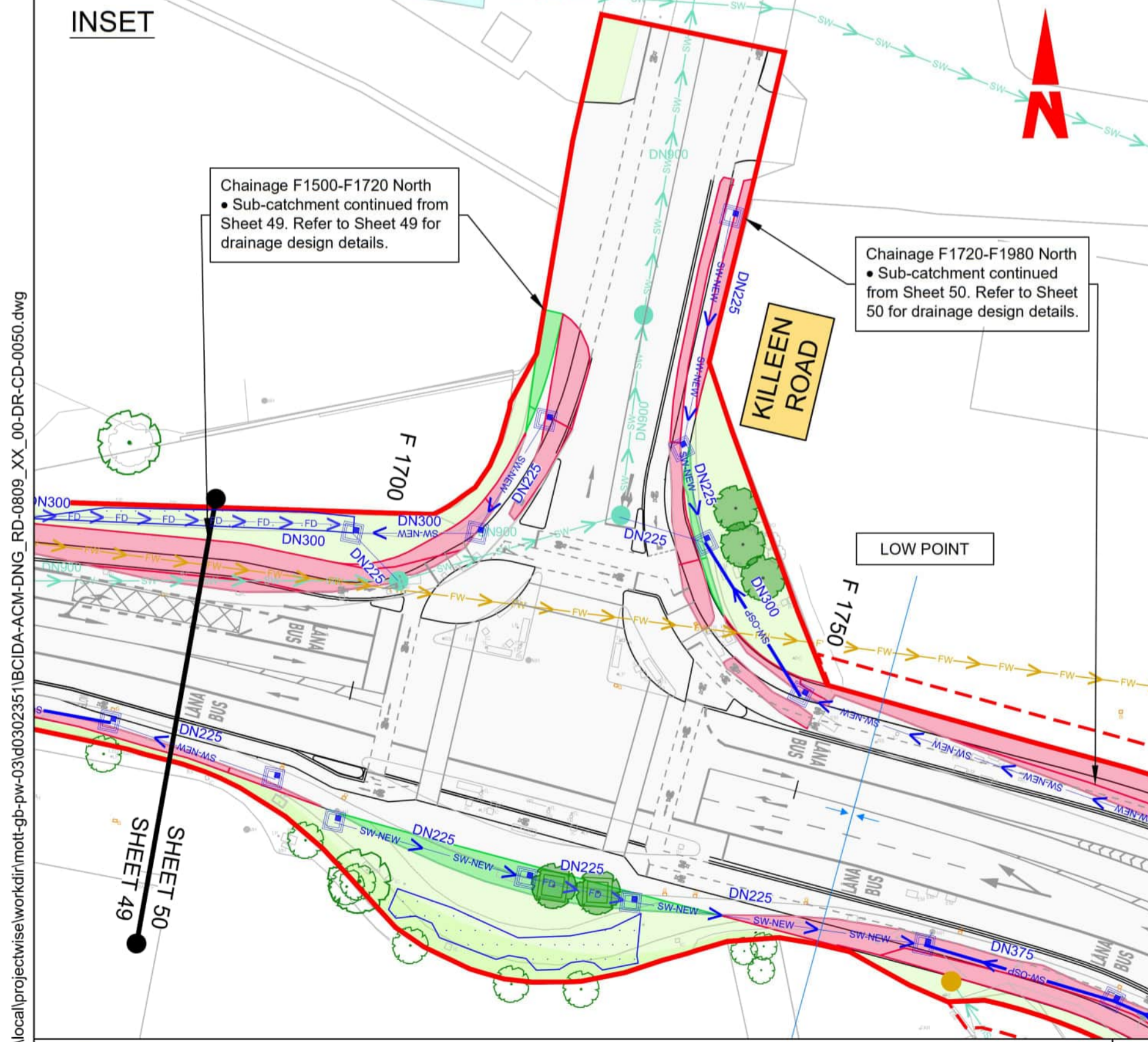
- Carriageway in camber - road falls to both sides (F1700-F1780). Carriageway falls to the right (F1780-F1980).
- Additional impermeable area = 477 m²
- Additional grassed (permeable) area = 85 m²
- Impermeable area to be attenuated = 392 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Potential compensatory bio-retention area to provide additional storage (52 m²).
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage network and connections where possible to drain carriageway.
- ADR: 19.3 l/s
- Vol_{att} = 6.6-23 m³

Chainage F1980-F2200 South

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 1622 m²
- Additional grassed (permeable) area = 159 m²
- Impermeable area to be attenuated = 1463 m²
- New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN600. Drainage to be collected from footway and cycleway using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Proposed surface levels unavailable in this area - drainage design is subject to design development.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage and connections where possible to drain carriageway.
- Existing drainage network outfalls to Cammock River.
- Sub-catchment continues on Sheet 51 until CH2200.
- ADR = 24.8 l/s
- Vol_{att} = 22.0 - 51.0 m³

CHAINAGE F1690-F2100

Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where possible.



INSET

Chainage F1500-F1720 North
• Sub-catchment continued from Sheet 49. Refer to Sheet 49 for drainage design details.

Chainage F1720-F1980 North
• Sub-catchment continued from Sheet 50. Refer to Sheet 50 for drainage design details.

Chainage F1700-F1980 South
• Sub-catchment continued from Sheet 50. Refer to Sheet 50 for drainage design details.

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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

LEGEND:

[Pink shaded area]	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	[Blue dashed line]	PROPOSED RODDING EYE
[Green shaded area]	EXISTING PAVED AREAS TO BECOME GRASSED	[Blue square]	PROPOSED MANHOLE
[Light green shaded area]	EXISTING GRASSED AREAS TO BE MAINTAINED	[Blue square with cross]	PROPOSED INSPECTION CHAMBER
[Yellow dashed line]	EXISTING FOUL NETWORK	[Green circle]	EXISTING TREE
[Green dashed line]	EXISTING COMBINED NETWORK	[Red circle]	EXISTING TREE TO BE REMOVED
[Blue dashed line]	EXISTING SURFACE WATER NETWORK	[Green circle with cross]	PROPOSED NEW TREE
[Blue dashed line with 'X']	EXISTING OVERFLOW PIPE	[Green square]	PROPOSED NEW TREE PIT
[Blue dashed line with 'P']	PLANNED SURFACE WATER PIPE	[Green rectangle]	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
[Blue dashed line with 'SW']	PROPOSED STORM WATER PIPE	[Green circle]	EXISTING GULLY
[Blue dashed line with 'SW-OSP']	PROPOSED OVERSIZED PIPE	[Red dashed line]	SITE BOUNDARY LINE
[Blue dashed line with 'FD']	PROPOSED FILTER DRAIN/PERFORATED PIPE	[Red dashed line with dots]	TEMPORARY LAND ACQUISITION
[Blue dashed line with 'P']	PROPOSED PERMEABLE PAVING		

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

Client: NTA (National Transport Authority) - Údarás Náisiúnta Iompair

Engineering Designer: AECOM, MOTT MACDONALD

Date: 28/03/23 | Scale: 1:500 @ A1, 1:1000 @ A3

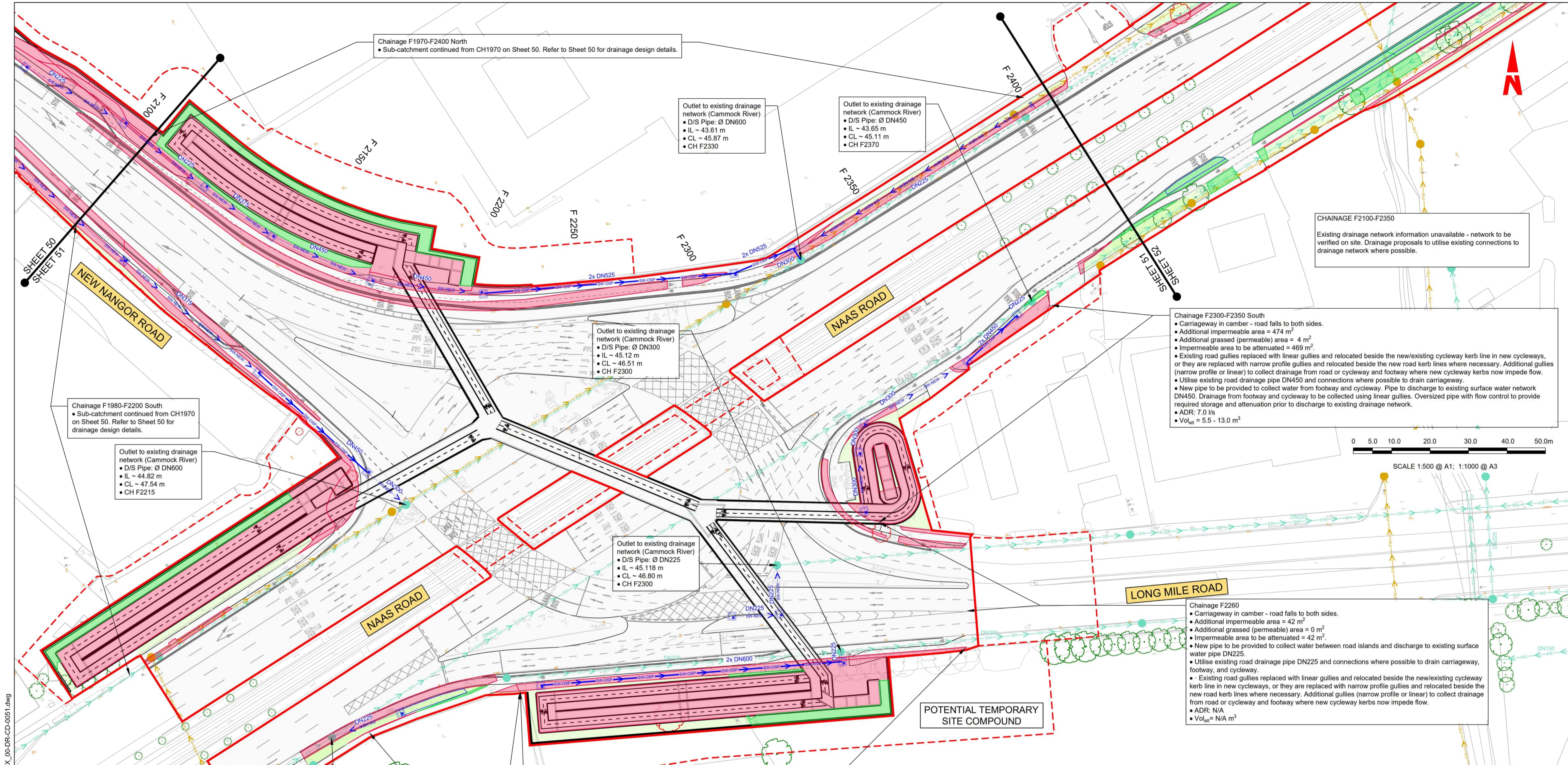
Drawn: A.FLEMING | Checked: R.LOUGH | Approved: C.ACTON

Project Code: BCIDA | Originator Code: ACM

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS

Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0050	Sheet Number: 50 of 56	Status: A	Rev: M01
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SCALE 1:500 @ A1; 1:1000 @ A3

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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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- 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

Chainage F1970-F2400 North
 • Sub-catchment continued from CH1970 on Sheet 50. Refer to Sheet 50 for drainage design details.

Chainage F2240
 • Carriageway in camber - road falls to both sides.
 • Additional impermeable area = 129 m²
 • Additional grassed (permeable) area = 6 m²
 • Impermeable area to be attenuated = 123 m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Utilise existing road drainage and connections where possible to drain existing carriageway, footway, and cycleway.
 • Potential bio-retention area (39 m²) with flow control to provide required storage and attenuation for cycleway drainage prior to discharge to existing drainage network DN450.
 • ADR: 2.7 l/s
 • Vol_{att} = 1.5 - 4.2 m³

Chainage F2250
 • Carriageway in camber - road falls to both sides.
 • Additional impermeable area = 1146 m²
 • Additional grassed (permeable) area = 124 m²
 • Impermeable area to be attenuated = 1023 m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • New pipes to be provided to collect water from footway and cycleway. Pipes to discharge to existing surface water network DN300. Drainage from footway and cycleway to be collected using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
 • Utilise existing road drainage and connections where possible to drain carriageway.
 • ADR: 11.0 l/s
 • Vol_{att} = 12.0 - 26.0 m³

Chainage F2300-F2350 South
 • Carriageway in camber - road falls to both sides.
 • Additional impermeable area = 474 m²
 • Additional grassed (permeable) area = 4 m²
 • Impermeable area to be attenuated = 469 m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Utilise existing road drainage pipe DN450 and connections where possible to drain carriageway.
 • New pipe to be provided to collect water from footway and cycleway. Pipe to discharge to existing surface water network DN450. Drainage from footway and cycleway to be collected using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
 • ADR: 7.0 l/s
 • Vol_{att} = 5.5 - 13.0 m³

Chainage F2300-F2350 North
 • D/S Pipe: Ø DN450
 • IL ~ 43.65 m
 • CL ~ 45.11 m
 • CH F2370

Chainage F2300-F2350 South
 • D/S Pipe: Ø DN300
 • IL ~ 45.12 m
 • CL ~ 46.51 m
 • CH F2300

Chainage F2300-F2350 South
 • D/S Pipe: Ø DN225
 • IL ~ 45.118 m
 • CL ~ 46.80 m
 • CH F2300

Chainage F1980-F2200 South
 • Sub-catchment continued from CH1970 on Sheet 50. Refer to Sheet 50 for drainage design details.

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN600
 • IL ~ 44.82 m
 • CL ~ 47.54 m
 • CH F2215

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN600
 • IL ~ 43.61 m
 • CL ~ 45.87 m
 • CH F2330

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN450
 • IL ~ 43.65 m
 • CL ~ 45.11 m
 • CH F2370

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN300
 • IL ~ 45.12 m
 • CL ~ 46.51 m
 • CH F2300

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN225
 • IL ~ 45.118 m
 • CL ~ 46.80 m
 • CH F2300

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN450
 • IL ~ 45.87 m
 • CL ~ 48.37 m
 • CH F2215

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<p>Project Ireland 2040 Building Ireland's Future</p>		<p>Date 28/03/23 Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>		<p>Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0051 Sheet Number 51 of 56 Status A Rev M01</p>	

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 NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- PLANNED SURFACE WATER PIPE
- 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 F2700 - F2850 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 454 m²
- Additional grassed (permeable) area = 67 m²
- Impermeable area to be attenuated = 387 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework DN600 & DN225 where possible to drain carriageway.
- Cycleway and footway to be drained using linear gullies and a filter drain running through a potential bio-retention area (60 m²). Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network DN600.
- Sub-catchment continues on Sheet 53 until CH2850.
- ADR: 13.3 l/s
- Vol_{att} = 5.6 - 18.0 m³

Chainage F2400-F2700 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 475 m²
- Additional grassed (permeable) area = 454 m²
- Impermeable area to be attenuated = 20 m²
- Cycleway from CH2500-2700 to be drained directly by a series of filter drains that connect into existing gully connections.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework DN600 & DN225 where possible to drain carriageway.
- ADR: N/A l/s
- Vol_{att} = N/A m³

Outlet to existing drainage network (Cammock River) via existing gully tails

- D/S Pipe: RG2700x1800
- IL ~ 39.6 m
- CL ~ 42.68 m
- CH F2500-F2700

Outlet to existing drainage network (Cammock River) via existing gully tails

- D/S Pipe: RG2700x1800
- IL ~ 39.6 m
- CL ~ 42.68 m
- CH F2500-F2700

Outlet to existing drainage network (Cammock River) via existing gully tails

- D/S Pipe: DN600
- IL ~ 40.204
- CL ~ 42.83
- CH F2500

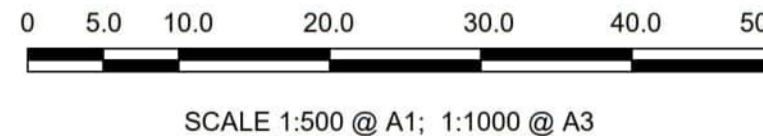
Chainage F2300-F2750 South

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 286 m²
- Additional grassed (permeable) area = 747 m²
- Net permeable area (no additional attenuation required) = 462 m²
- Utilise existing road drainage network DN225, DN375, DN450 and connections where possible to drain footway, cycleway, and carriageway.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Linear gullies required to collect drainage from cycleway and footway.
- Potential compensatory bio-retention areas (242 m² & 25 m²) in green areas.
- Existing drainage network discharges to Cammock River.
- ADR: N/A
- Vol_{att} = N/A

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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.
 - 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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 - 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

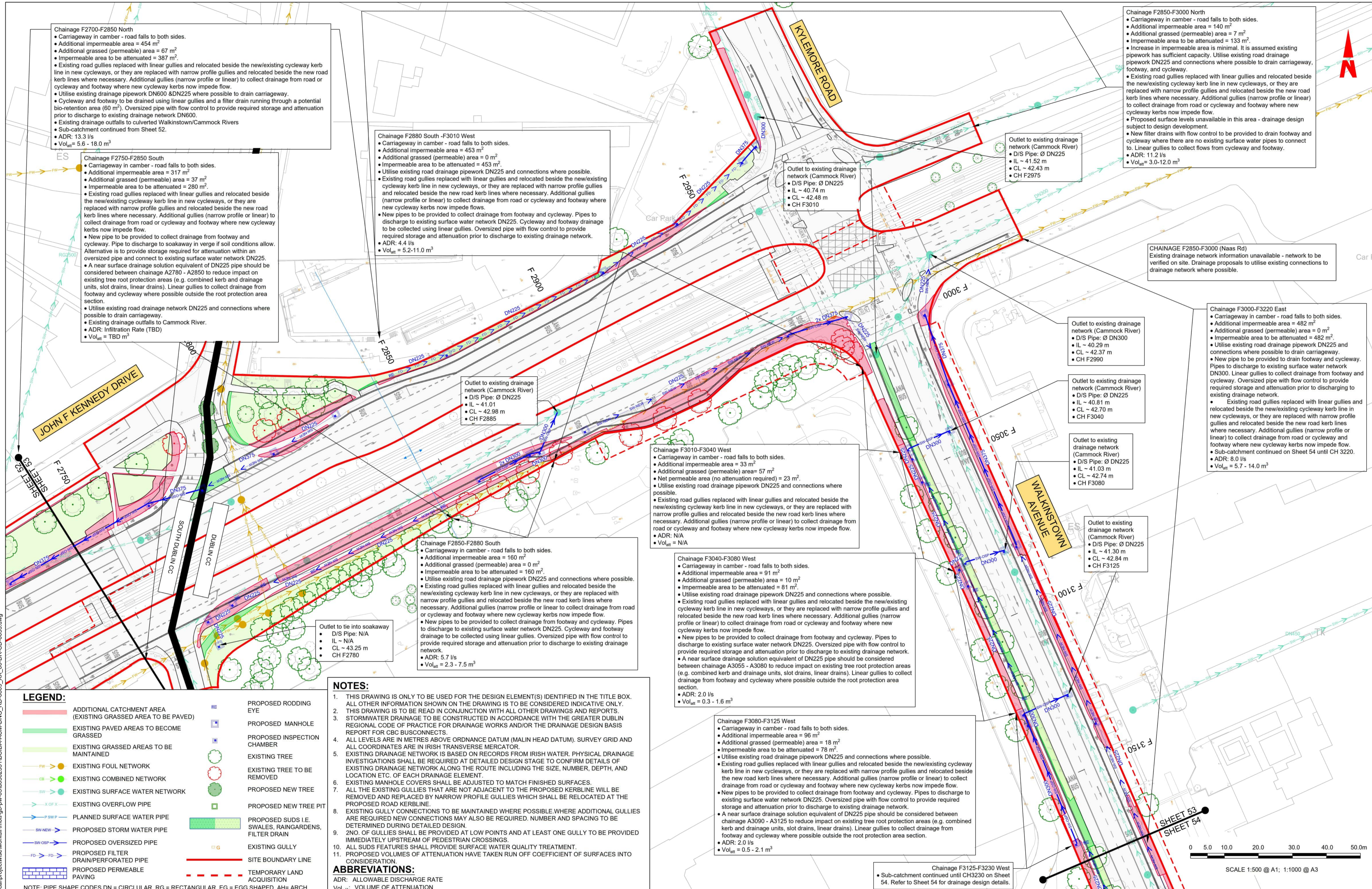
Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Programme Title	Drawing Title	Drawing File Name	Sheet Number	Status	Rev
BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS	TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS	BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0052	52 of 56	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Chainage F2700-F2850 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 454 m²
- Additional grassed (permeable) area = 67 m²
- Impermeable area to be attenuated = 387 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework DN600 & DN225 where possible to drain carriageway.
- Cycleway and footway to be drained using linear gullies and a filter drain running through a potential bio-retention area (60 m²). Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network DN600.
- Existing drainage outfalls to culverted Walkinstown/Camnock Rivers
- Sub-catchment continued from Sheet 52.
- ADR: 13.3 l/s
- Vol_{att} = 5.6 - 18.0 m³

Chainage F2750-F2850 South

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 317 m²
- Additional grassed (permeable) area = 37 m²
- Impermeable area to be attenuated = 280 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipe to be provided to collect drainage from footway and cycleway. Pipe to discharge to soakaway in verge if soil conditions allow. Alternative is to provide storage for attenuation within an oversized pipe and connect to existing surface water network DN225.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A2780 - A2850 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.
- Utilise existing road drainage network DN225 and connections where possible to drain carriageway.
- Existing drainage outfalls to Camnock River.
- ADR: Infiltration Rate (TBD)
- Vol_{att} = TBD m³

Chainage F2880 South - F3010 West

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 453 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 453 m²
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flows.
- New pipes to be provided to collect drainage from footway and cycleway. Pipes to discharge to existing surface water network DN225. Cycleway and footway drainage to be collected using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- ADR: 4.4 l/s
- Vol_{att} = 5.2-11.0 m³

Outlet to existing drainage network (Camnock River)

- D/S Pipe: Ø DN225
- IL - 40.74 m
- CL - 42.48 m
- CH F2975

Chainage F2850-F3000 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 140 m²
- Additional grassed (permeable) area = 7 m²
- Impermeable area to be attenuated = 133 m²
- Increase in impermeable area is minimal. It is assumed existing pipework has sufficient capacity. Utilise existing road drainage pipework DN225 and connections where possible to drain carriageway, footway, and cycleway.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Proposed surface levels unavailable in this area - drainage design subject to design development.
- New filter drains with flow control to be provided to drain footway and cycleway where there are no existing surface water pipes to connect to. Linear gullies to collect flows from cycleway and footway.
- ADR: 11.2 l/s
- Vol_{att} = 3.0-12.0 m³

CHAINAGE F2850-F3000 (Naas Rd)

Existing drainage network information unavailable - network to be verified on site. Drainage proposals to utilise existing connections to drainage network where possible.

Outlet to existing drainage network (Camnock River)

- D/S Pipe: Ø DN225
- IL - 41.01
- CL - 42.98 m
- CH F2885

Chainage F3010-F3040 West

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 33 m²
- Additional grassed (permeable) area = 57 m²
- Net permeable area (no attenuation required) = 23 m²
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- ADR: N/A
- Vol_{att} = N/A

Outlet to existing drainage network (Camnock River)

- D/S Pipe: Ø DN300
- IL - 40.29 m
- CL - 42.37 m
- CH F2990

Outlet to existing drainage network (Camnock River)

- D/S Pipe: Ø DN225
- IL - 40.81 m
- CL - 42.70 m
- CH F3040

Outlet to existing drainage network (Camnock River)

- D/S Pipe: Ø DN225
- IL - 41.03 m
- CL - 42.74 m
- CH F3080

Chainage F3000-F3220 East

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 482 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 482 m²
- Utilise existing road drainage pipework DN225 and connections where possible to drain carriageway.
- New pipe to be provided to drain footway and cycleway. Pipes to discharge to existing surface water network DN300. Linear gullies to collect drainage from footway and cycleway. Oversized pipe with flow control to provide required storage and attenuation prior to discharging to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Sub-catchment continued on Sheet 54 until CH 3220.
- ADR: 8.0 l/s
- Vol_{att} = 5.7 - 14.0 m³

Chainage F2850-F2880 South

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 160 m²
- Additional grassed (permeable) area = 0 m²
- Impermeable area to be attenuated = 160 m²
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided to collect drainage from footway and cycleway. Pipes to discharge to existing surface water network DN225. Cycleway and footway drainage to be collected using linear gullies. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- ADR: 5.7 l/s
- Vol_{att} = 2.3 - 7.5 m³

Chainage F3040-F3080 West

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 91 m²
- Additional grassed (permeable) area = 10 m²
- Impermeable area to be attenuated = 81 m²
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided to collect drainage from footway and cycleway. Pipes to discharge to existing surface water network DN225. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A3055 - A3080 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.
- ADR: 2.0 l/s
- Vol_{att} = 0.3 - 1.6 m³

Chainage F3080-F3125 West

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 96 m²
- Additional grassed (permeable) area = 18 m²
- Impermeable area to be attenuated = 78 m²
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided to collect drainage from footway and cycleway. Pipes to discharge to existing surface water network DN225. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A3090 - A3125 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.
- ADR: 2.0 l/s
- Vol_{att} = 0.5 - 2.1 m³

Chainage F3125-F3230 West

- Sub-catchment continued until CH3230 on Sheet 54. Refer to Sheet 54 for drainage design details.

NOTES:

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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 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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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 CODE 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

<p>Rev M01 Date 28/03/23 Dm AF Chk'd RL App'd CA Description ISSUE FOR PHASE 4: PLANNING</p>					<p>Client NTA Údárás 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 28/03/23 Scale 1:500 @ A1 1:1000 @ A3 Drawn A.FLEMING Checked R.LOUGH Approved C.ACTON</p>					<p>Project Code BCIDA Originator Code ACM QMS Code</p>		<p>Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0053</p>		<p>Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>	
<p>Project Code BCIDA Originator Code ACM QMS Code</p>					<p>Sheet Number 53 of 56 Status A Rev M01</p>		<p>Scale 1:500 @ A1; 1:1000 @ A3</p>		<p>Scale 1:500 @ A1; 1:1000 @ A3</p>	

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Chainage F3125-F3230 West

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 158 m²
- Additional grassed (permeable) area = 87 m²
- Impermeable area to be attenuated = 71 m².
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided to collect drainage from footway and cycleway. Pipes to discharge to existing surface water network DN225. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A3170-A3230 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.
- Sub-catchment continued from CH 3125 on Sheet 53
- ADR: 3.0 l/s
- Vol_{att} = 1.1 - 3.7 m³

Chainage F3230 - F3290 West

- Carriageway falls to the right.
- Additional impermeable area = 140 m²
- Additional grassed (permeable) area = 15 m²
- Impermeable area to be attenuated = 126 m²
- Utilise existing road drainage pipework DN225 and connections where possible.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- New pipes to be provided to collect drainage from footway and cycleway. Pipes to discharge to existing surface water network DN225. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- A near surface drainage solution equivalent of DN225 pipe should be considered between chainage A3230 to A3250 to reduce impact on existing tree root protection areas (e.g. combined kerb and drainage units, slot drains, linear drains). Linear gullies to collect drainage from footway and cycleway where possible outside the root protection area section.
- ADR: 2.0 l/s
- Vol_{att} = 1.4 - 3.6 m³

Chainage F3290-F3330 West

- Carriageway falls to the right.
- Additional impermeable area = 88 m²
- Additional grassed (permeable) area = 5 m²
- Impermeable area to be attenuated = 83 m².
- New pipe to be provided to collect flows from footway and cycleway. Pipe to discharge to existing surface water network DN225. Linear gullies to collect drainage from footway and cycleway. Oversized pipe with flow control to provide required storage and attenuation prior to discharge to existing drainage network.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing drainage pipework and connections where possible to drain carriageway.
- ADR: 2.1 l/s
- Vol_{att} = 1.1 - 3.1 m³

Chainage West of F3330 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 0 m²
- Additional grassed (permeable) area = 113 m²
- Net permeable area (no attenuation required) = 113 m²
- Utilise existing drainage pipework DN225 and connections where possible to drain footway, cycleway, and carriageway.
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Linear gullies to collect flow from cycleway and footway and discharge into existing DN225 pipe.
- Potential compensatory bio-retention area (20 m²) in verge.
- ADR: N/A
- Vol_{att} = N/A

- NOTES:**
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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.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

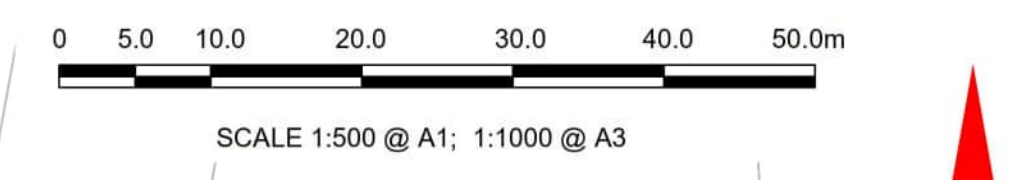
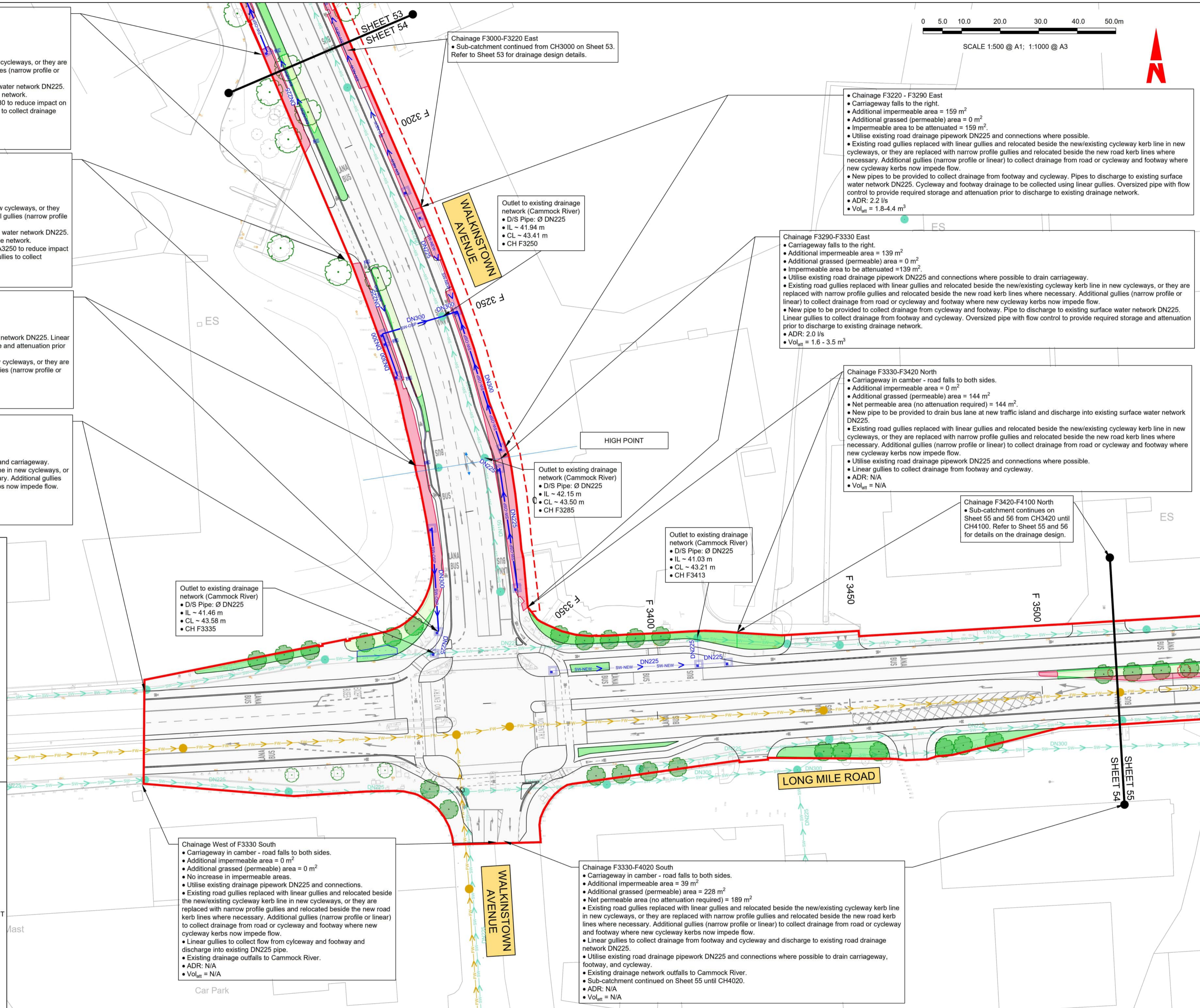
ABBREVIATIONS:

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

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 NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
Scale: 1:500 @ A1, 1:1000 @ A3

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

Project Code: BCIDA
Originator Code: ACM

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0054	Sheet Number: 54 of 56	Status: A	Rev: M01

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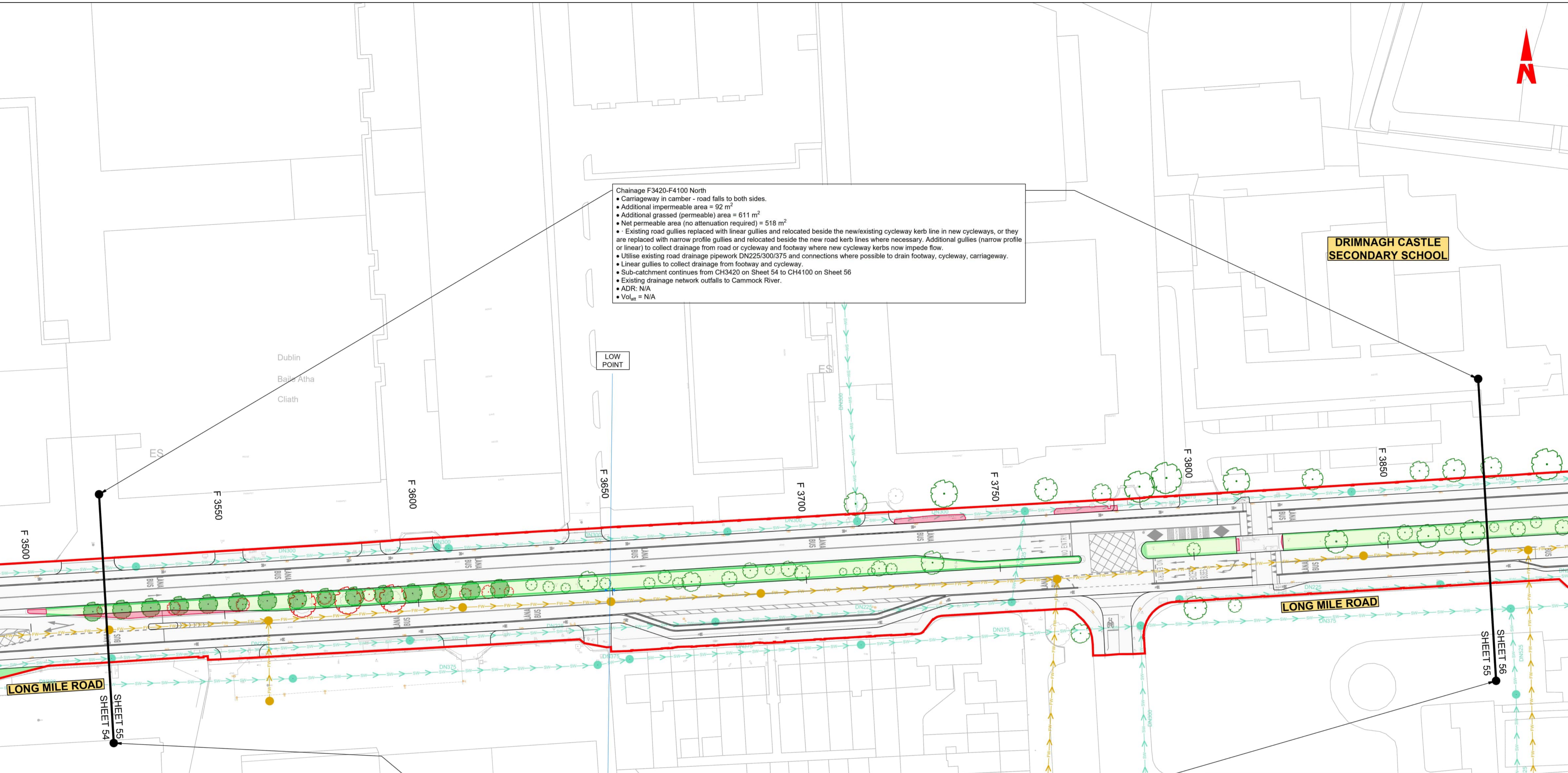
DRIMNAGH CASTLE
SECONDARY SCHOOL

Chainage F3420-F4100 North

- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 92 m²
- Additional grassed (permeable) area = 611 m²
- Net permeable area (no attenuation required) = 518 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework DN225/300/375 and connections where possible to drain footway, cycleway, carriageway.
- Linear gullies to collect drainage from footway and cycleway.
- Sub-catchment continues from CH3420 on Sheet 54 to CH4100 on Sheet 56
- Existing drainage network outfalls to Cammock River.
- ADR: N/A
- Vol_{att} = N/A

Chainage F3330-F4020 South

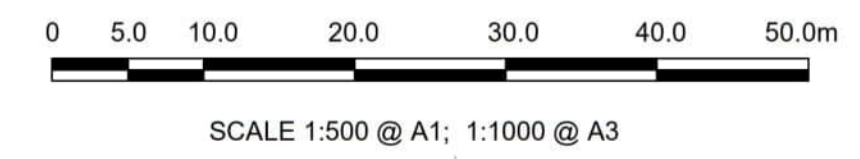
- Carriageway in camber - road falls to both sides.
- Additional impermeable area = 39 m²
- Additional grassed (permeable) area = 228 m²
- Net permeable area (no attenuation required) = 189 m²
- Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
- Utilise existing road drainage pipework DN225 and connections where possible to drain carriageway, footway, and cycleway.
- Existing drainage network outfalls to Cammock River.
- Sub-catchment continued from Sheet 54 and continues on Sheet 56.
- ADR: N/A
- Vol_{att} = N/A



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 NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PLANNED SURFACE WATER PIPE		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 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 ORDINANCE 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	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23 Scale: 1:500 @ A1, 1:1000 @ A3
 Drawn: A.FLEMING, Checked: R.LOUGH, Approved: C.ACTON

Project Code: BCIDA, Originator Code: ACM, QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0055	Sheet Number: 55 of 56	Status: A	Rev: M01

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



Chainage F3420-F4100 North
 • Carriageway falls to the left.
 • Additional impermeable area = 92 m²
 • Additional grassed (permeable) area = 611 m²
 • Net permeable area (no attenuation required) = 518 m²
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Utilise existing road drainage pipework DN225/300/375 and connections where possible to drain footway, cycleway, carriageway.
 • Linear gullies to collect drainage from footway and cycleway.
 • Sub-catchment continues from CH3420 on Sheet 54.
 • ADR: N/A
 • Vol_{att} = N/A

Outlet to existing drainage network (Cammock River)
 • D/S Pipe: Ø DN225
 • IL ~ 39.64 m
 • CL ~ 41.19 m
 • CH F4045

Chainage F4020-F4100 South
 • Carriageway falls to the left.
 • Additional impermeable area = 0 m²
 • Additional grassed (permeable) area = 0 m²
 • No change in impermeable area
 • New pipe to be provided to collect drainage from footway and cycleway. Pipe to discharge to existing surface water network DN225.
 • Existing road gullies replaced with linear gullies and relocated beside the new/existing cycleway kerb line in new cycleways, or they are replaced with narrow profile gullies and relocated beside the new road kerb lines where necessary. Additional gullies (narrow profile or linear) to collect drainage from road or cycleway and footway where new cycleway kerbs now impede flow.
 • Linear gullies to collect drainage from footway and cycleway.
 • Utilise existing road drainage pipework DN225 and connections where possible.
 • ADR: N/A
 • Vol_{att} = N/A

Chainage F3330-F4020 South
 • Sub-catchment continues from CH3330 on Sheet 56. Refer to Sheet 55 for drainage design details.

LEGEND:

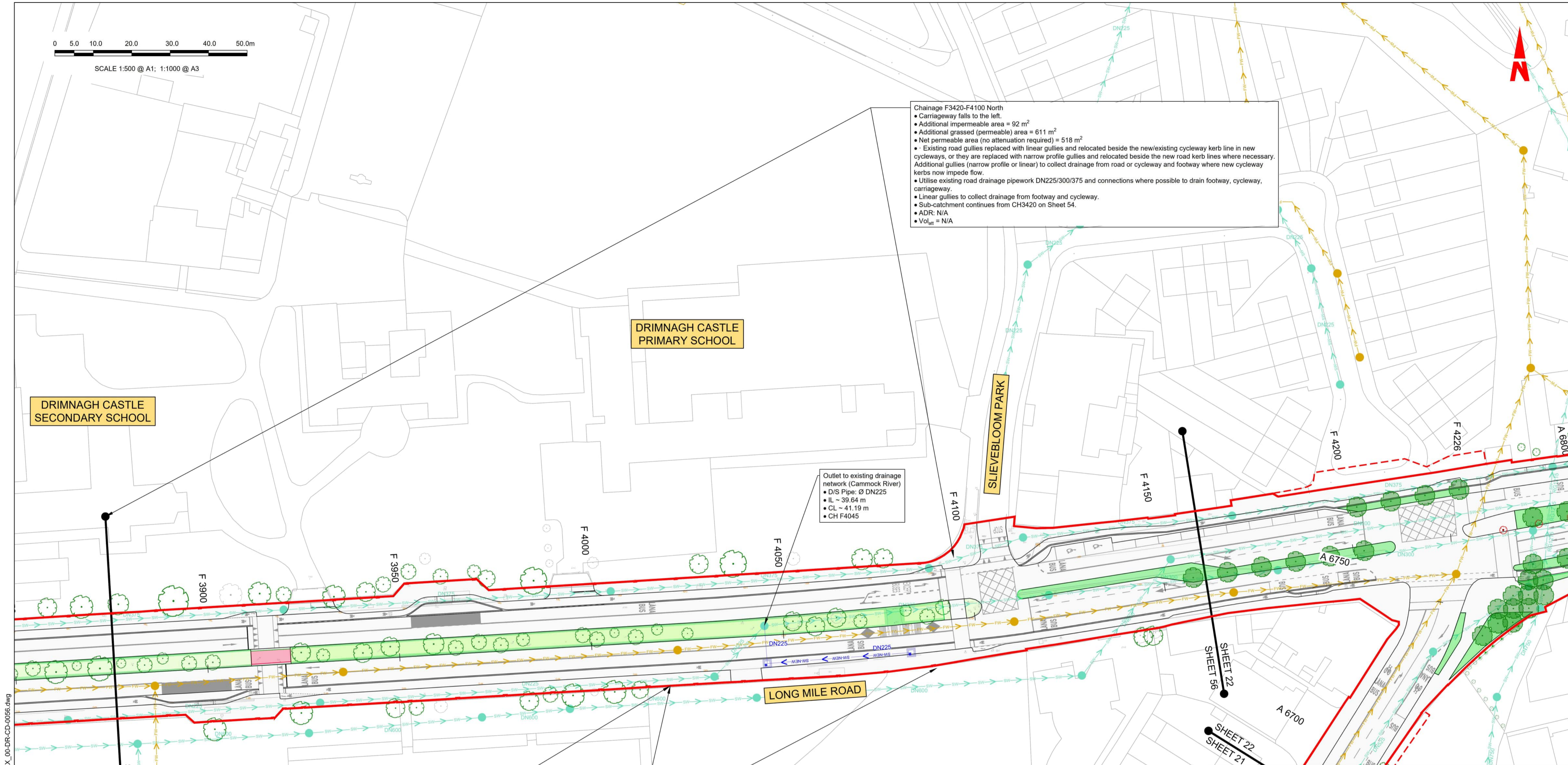
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	PLANNED SURFACE WATER PIPE		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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ABBREVIATIONS:
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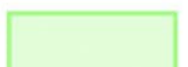
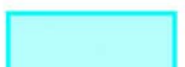







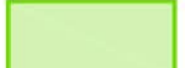


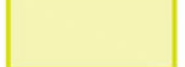






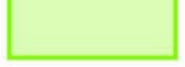








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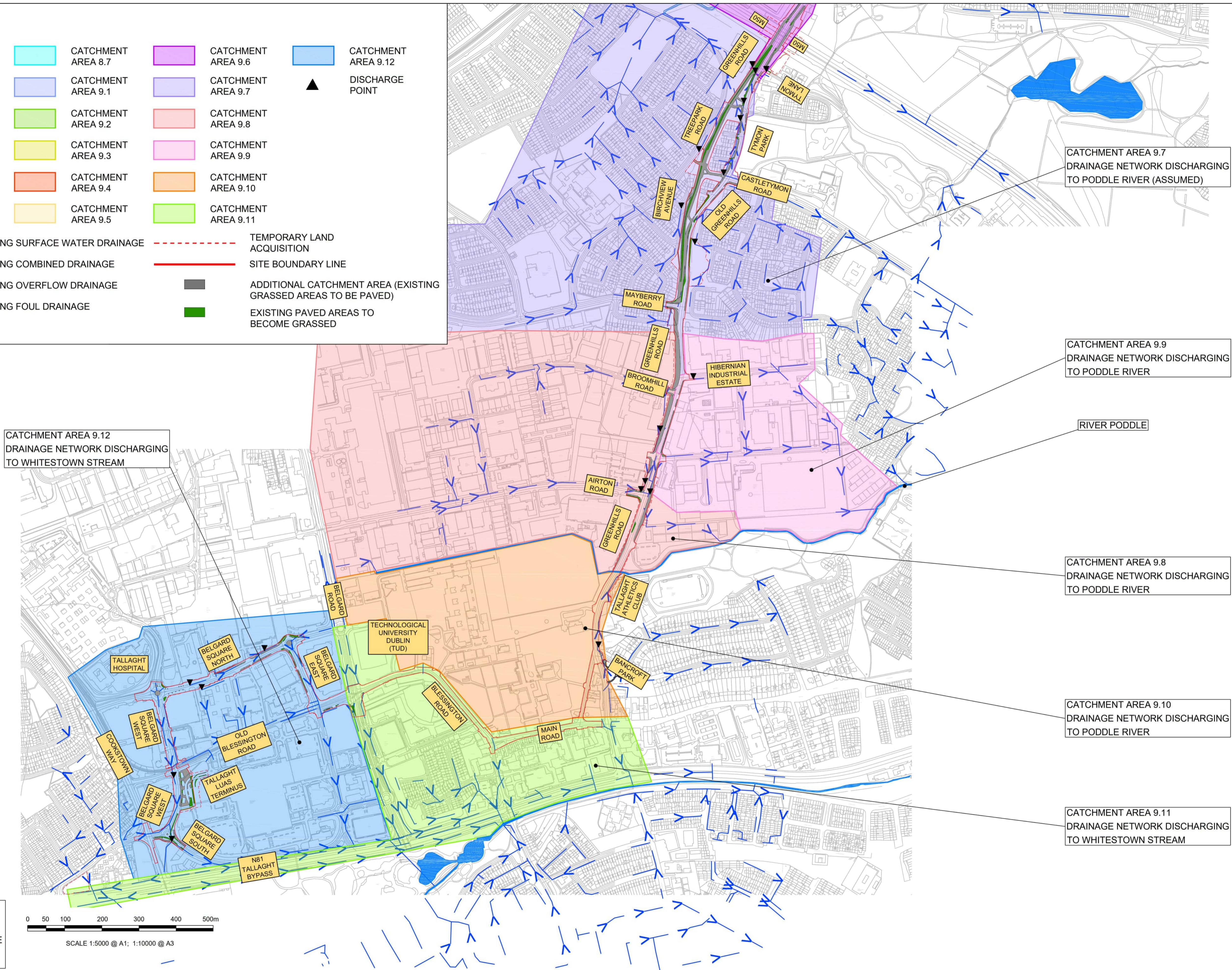
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	Rev	Date	Drn	Chk'd	App'd	Description	Client	Engineering Designer			Programme Title
	M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING	NTA Údarás Náisiúnta Iompair National Transport Authority	AECOM	MOTT MACDONALD	M	BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS
	Date	28/03/23	Scale	1:500 @ A1 1:1000 @ A3	Drawn	A.FLEMING	Checked	R.LOUGH	Approved	C.ACTON	Drawing Title
	Project Code	BCIDA	Originator Code	ACM	QMS Code						TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS
	Drawing File Name	BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-0056	Sheet Number	56 of 56	Status	A	Rev	M01			

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LEGEND:

- | | | | |
|---|--|---|---|
|  CATCHMENT AREA 8.1 |  CATCHMENT AREA 8.7 |  CATCHMENT AREA 9.6 |  CATCHMENT AREA 9.12 |
|  CATCHMENT AREA 8.2 |  CATCHMENT AREA 9.1 |  CATCHMENT AREA 9.7 |  DISCHARGE POINT |
|  CATCHMENT AREA 8.3 |  CATCHMENT AREA 9.2 |  CATCHMENT AREA 9.8 | |
|  CATCHMENT AREA 8.4 |  CATCHMENT AREA 9.3 |  CATCHMENT AREA 9.9 | |
|  CATCHMENT AREA 8.5 |  CATCHMENT AREA 9.4 |  CATCHMENT AREA 9.10 | |
|  CATCHMENT AREA 8.6 |  CATCHMENT AREA 9.5 |  CATCHMENT AREA 9.11 | |
-
- | | |
|--|--|
|  EXISTING SURFACE WATER DRAINAGE |  TEMPORARY LAND ACQUISITION |
|  EXISTING COMBINED DRAINAGE |  SITE BOUNDARY LINE |
|  EXISTING OVERFLOW DRAINAGE |  ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED) |
|  EXISTING FOUL DRAINAGE |  EXISTING PAVED AREAS TO BECOME GRASSED |



CATCHMENT AREA 9.12
DRAINAGE NETWORK DISCHARGING TO WHITESTOWN STREAM

CATCHMENT AREA 9.7
DRAINAGE NETWORK DISCHARGING TO PODDLE RIVER (ASSUMED)

CATCHMENT AREA 9.9
DRAINAGE NETWORK DISCHARGING TO PODDLE RIVER

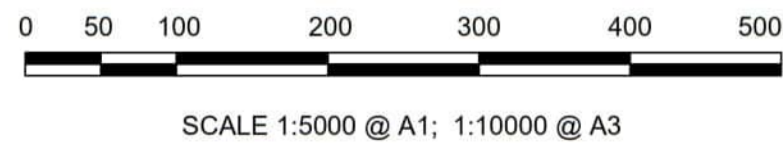
RIVER PODDLE

CATCHMENT AREA 9.8
DRAINAGE NETWORK DISCHARGING TO PODDLE RIVER

CATCHMENT AREA 9.10
DRAINAGE NETWORK DISCHARGING TO PODDLE RIVER

CATCHMENT AREA 9.11
DRAINAGE NETWORK DISCHARGING TO WHITESTOWN STREAM

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






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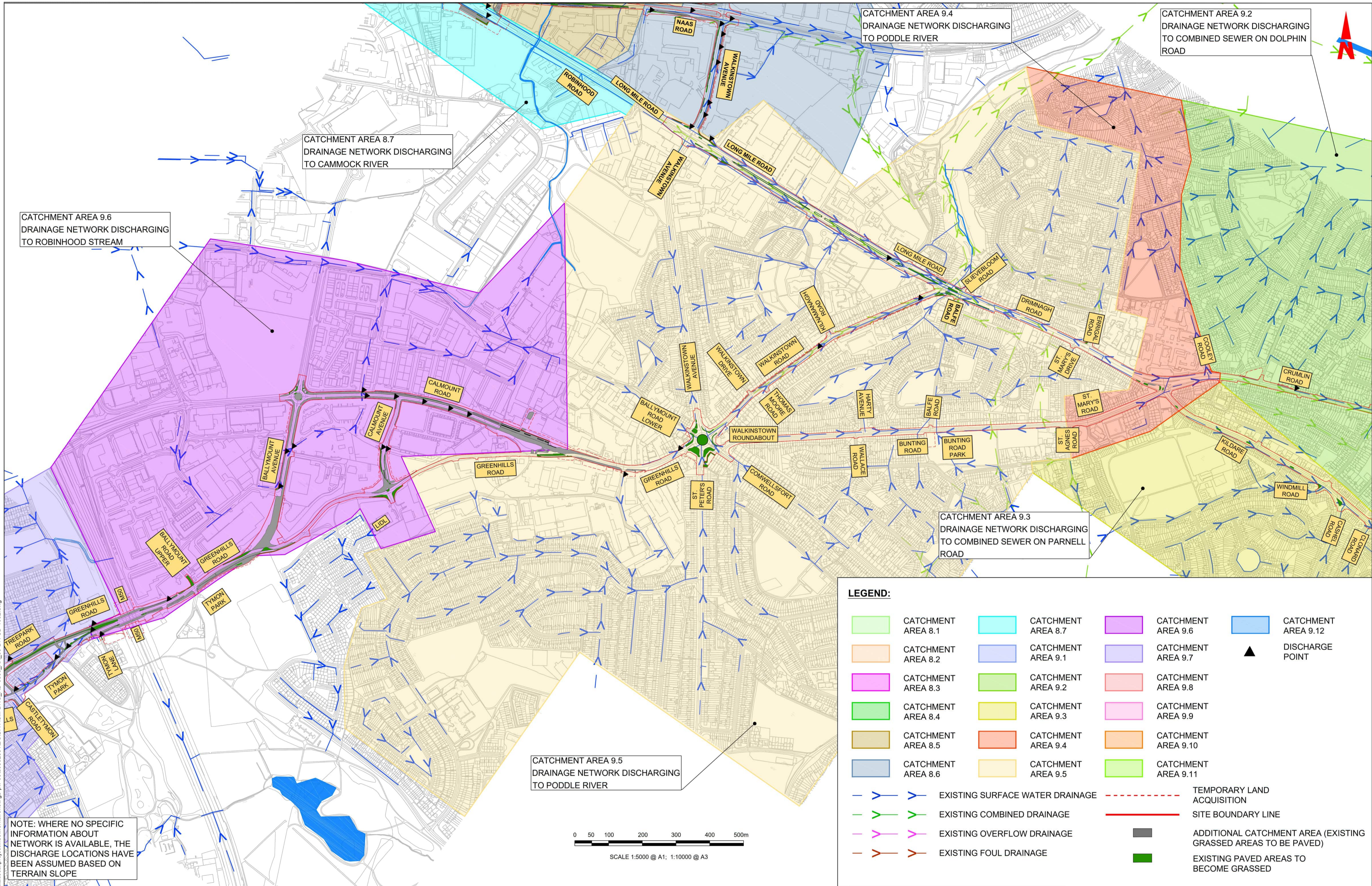
Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

 Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer  		
Date 28/03/23	Scale 1:5000 @ A1 1:10000 @ A3	Drawn A.FLEMING	Checked R.LOUGH	Approved C.ACTON
Project Code BCIDA	Originator Code ACM	QMS Code		

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME OVERALL CATCHMENT AREAS SHEET 1 OF 4			
Drawing File Name BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-1001	Sheet Number 1 of 4	Status A	Rev M01

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CATCHMENT AREA 9.6
DRAINAGE NETWORK DISCHARGING
TO ROBINHOOD STREAM

CATCHMENT AREA 8.7
DRAINAGE NETWORK DISCHARGING
TO CAMMOCK RIVER

CATCHMENT AREA 9.4
DRAINAGE NETWORK DISCHARGING
TO PODDLE RIVER

CATCHMENT AREA 9.2
DRAINAGE NETWORK DISCHARGING
TO COMBINED SEWER ON DOLPHIN
ROAD

CATCHMENT AREA 9.3
DRAINAGE NETWORK DISCHARGING
TO COMBINED SEWER ON PARNELL
ROAD

CATCHMENT AREA 9.5
DRAINAGE NETWORK DISCHARGING
TO PODDLE RIVER

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

LEGEND:

- CATCHMENT AREA 8.1
- CATCHMENT AREA 8.2
- CATCHMENT AREA 8.3
- CATCHMENT AREA 8.4
- CATCHMENT AREA 8.5
- CATCHMENT AREA 8.6
- CATCHMENT AREA 8.7
- CATCHMENT AREA 9.1
- CATCHMENT AREA 9.2
- CATCHMENT AREA 9.3
- CATCHMENT AREA 9.4
- CATCHMENT AREA 9.5
- CATCHMENT AREA 9.6
- CATCHMENT AREA 9.7
- CATCHMENT AREA 9.8
- CATCHMENT AREA 9.9
- CATCHMENT AREA 9.10
- CATCHMENT AREA 9.11
- CATCHMENT AREA 9.12
- DISCHARGE POINT
- TEMPORARY LAND ACQUISITION
- SITE BOUNDARY LINE
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED DRAINAGE
- EXISTING OVERFLOW DRAINAGE
- EXISTING FOUL DRAINAGE

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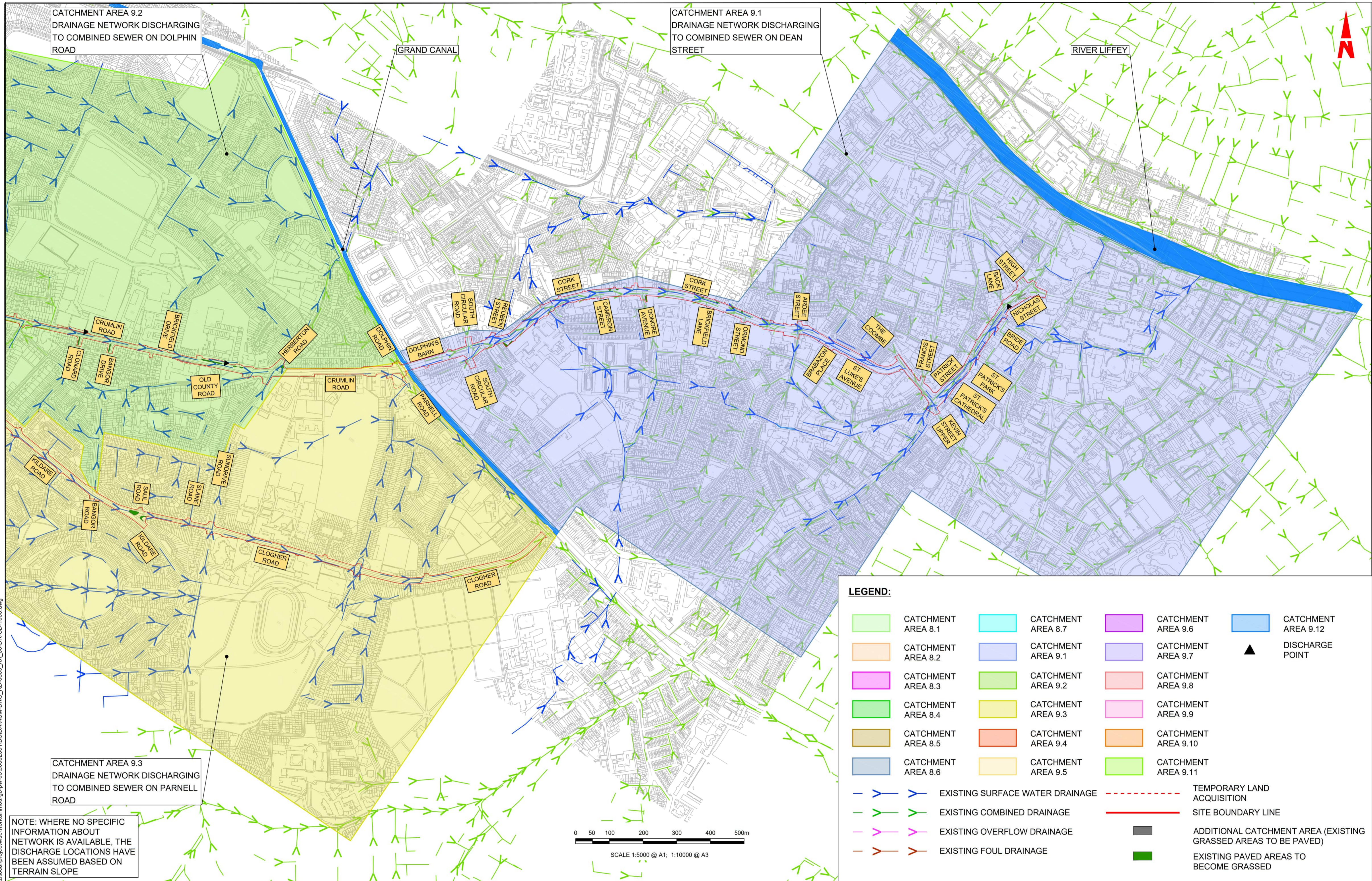
Client: **NTA** Údarás Náisiúnta Iompair National Transport Authority

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

Date: 28/03/23 Scale: 1:5000 @ A1, 1:10000 @ A3
 Drawn: A.FLEMING Checked: R.LOUGH Approved: C.ACTON

Project Code: BCIDA Originator Code: ACM QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME OVERALL CATCHMENT AREAS SHEET 2 OF 4			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-1002	Sheet Number: 2 of 4	Status: A	Rev: M01



CATCHMENT AREA 9.2
DRAINAGE NETWORK DISCHARGING
TO COMBINED SEWER ON DOLPHIN
ROAD

CATCHMENT AREA 9.1
DRAINAGE NETWORK DISCHARGING
TO COMBINED SEWER ON DEAN
STREET

RIVER LIFFEY

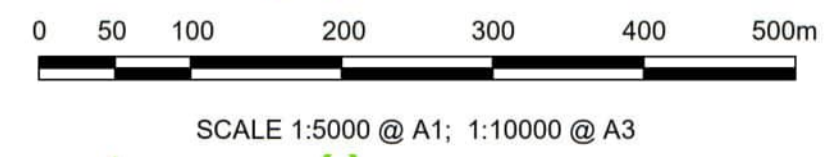
GRAND CANAL

CATCHMENT AREA 9.3
DRAINAGE NETWORK DISCHARGING
TO COMBINED SEWER ON PARNELL
ROAD

NOTE: WHERE NO SPECIFIC
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DISCHARGE LOCATIONS HAVE
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TERRAIN SLOPE

LEGEND:

- CATCHMENT AREA 8.1
- CATCHMENT AREA 8.2
- CATCHMENT AREA 8.3
- CATCHMENT AREA 8.4
- CATCHMENT AREA 8.5
- CATCHMENT AREA 8.6
- CATCHMENT AREA 8.7
- CATCHMENT AREA 8.8
- CATCHMENT AREA 8.9
- CATCHMENT AREA 8.10
- CATCHMENT AREA 8.11
- CATCHMENT AREA 9.1
- CATCHMENT AREA 9.2
- CATCHMENT AREA 9.3
- CATCHMENT AREA 9.4
- CATCHMENT AREA 9.5
- CATCHMENT AREA 9.6
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- SITE BOUNDARY LINE
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED



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Rev	Date	Drn	Chk'd	App'd	Description
M01	28/03/23	AF	RL	CA	ISSUE FOR PHASE 4: PLANNING

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

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

Date: 28/03/23
Scale: 1:10000 @ A1, 1:10000 @ A3

Project Code: BCIDA
Originator Code: ACM

Drawn: A.FLEMING
Checked: R.LOUGH
Approved: C.ACTON

QMS Code:

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: TALLAGHT/CLONDALKIN TO CITY CENTRE SCHEME OVERALL CATCHMENT AREAS SHEET 3 OF 4			
Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-1003	Sheet Number: 3 of 4	Status: A	Rev: M01



CATCHMENT AREA 8.1
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

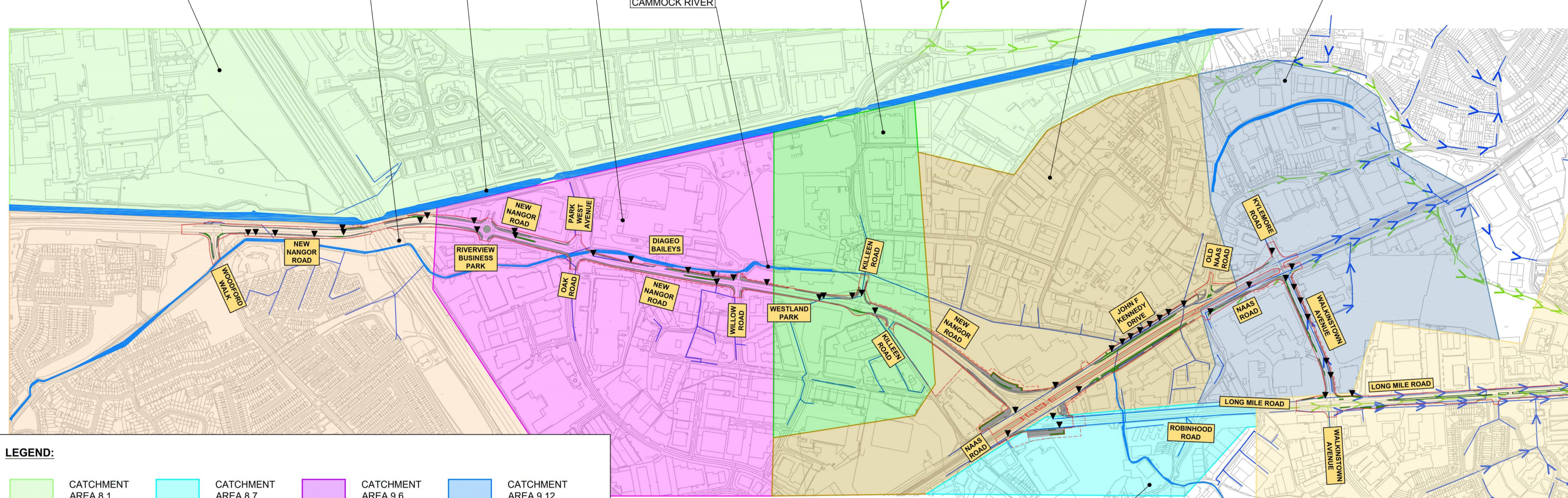
CATCHMENT AREA 8.2
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

CATCHMENT AREA 8.3
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

CATCHMENT AREA 8.4
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

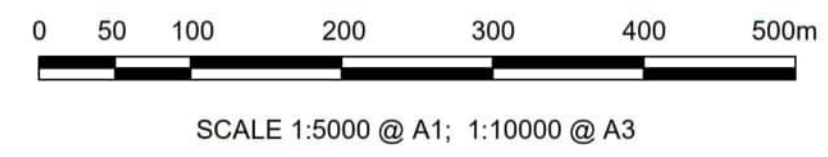
CATCHMENT AREA 8.5
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

CATCHMENT AREA 8.6
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER



LEGEND:

	CATCHMENT AREA 8.1		CATCHMENT AREA 8.7		CATCHMENT AREA 9.6		CATCHMENT AREA 9.12
	CATCHMENT AREA 8.2		CATCHMENT AREA 9.1		CATCHMENT AREA 9.7		DISCHARGE POINT
	CATCHMENT AREA 8.3		CATCHMENT AREA 9.2		CATCHMENT AREA 9.8		TEMPORARY LAND ACQUISITION
	CATCHMENT AREA 8.4		CATCHMENT AREA 9.3		CATCHMENT AREA 9.9		SITE BOUNDARY LINE
	CATCHMENT AREA 8.5		CATCHMENT AREA 9.4		CATCHMENT AREA 9.10		ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
	CATCHMENT AREA 8.6		CATCHMENT AREA 9.5		CATCHMENT AREA 9.11		EXISTING PAVED AREAS TO BECOME GRASSED
	EXISTING SURFACE WATER DRAINAGE		EXISTING COMBINED DRAINAGE		EXISTING OVERFLOW DRAINAGE		EXISTING FOUL DRAINAGE



CATCHMENT AREA 8.7
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

CATCHMENT AREA 9.5
DRAINAGE NETWORK DISCHARGING TO CAMMOCK RIVER

CATCHMENT AREA 9.6
DRAINAGE NETWORK DISCHARGING TO ROBINHOOD STREAM

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

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Drawing File Name: BCIDA-ACM-DNG_RD-0809_XX_00-DR-CD-1004	Sheet Number: 4 of 4	Status: A	Rev: M01

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