

Proposed  
Surface Water  
Drainage Works





# BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

## BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME

PROPOSED SURFACE WATER DRAINAGE WORKS	
DRAWING SERIES NUMBER(S)	DRAWING SERIES DESCRIPTION
BCIDD-ROT-DNG_IX-0304_XX_00-DR-CD-0001	BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRDIR SCHEME. DNG. COVER SHEET
BCIDD-ROT-DNG_KP-0304_XX_00-DR-CD-0001	BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRDIR SCHEME. DNG. KEY PLAN
BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-1001 to 1003	BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRDIR SCHEME. DNG. CATCHMENTS
BCIDD-ROT-DNG_ZZ-0304_XX_00-DR-CD-0001 to 0038	BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRDIR SCHEME. DNG. DRAWINGS

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Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

Client  

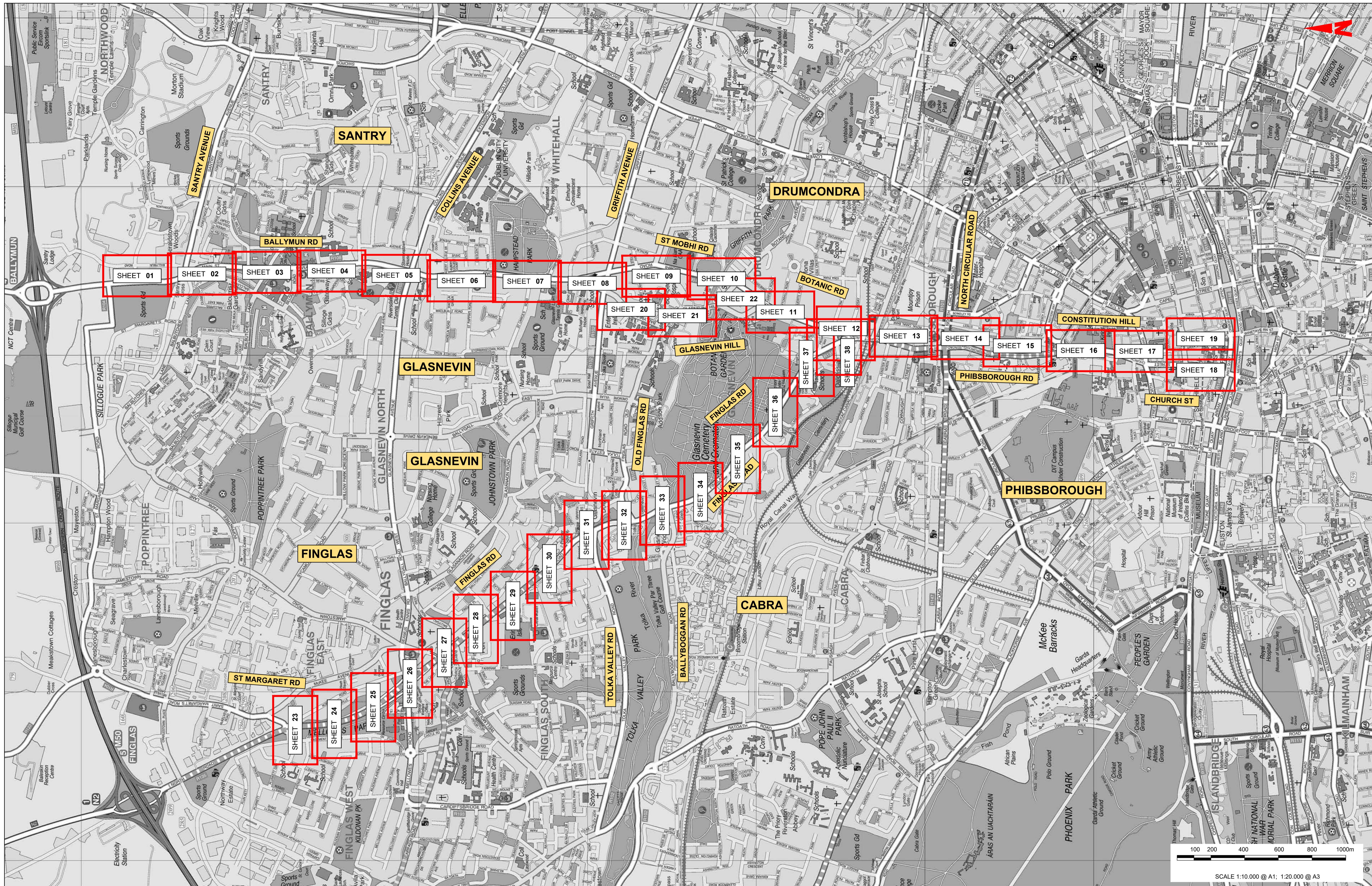
 Údarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer  

 ROUGHAN & O'DONOVAN TYPASA

Date	Scale	Drawn	Checked	Approved
13/05/2022	1:10000 @ A1 1:20000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCIDD	ROT			

Programme Title		<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>	
Drawing Title		BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS. COVER SHEET	
Drawing File Name	Sheet Number	Status	Rev
BCIDD-ROT-DNG_IX-0304_XX_00-DR-CD-0001	01 of 01	A	M01



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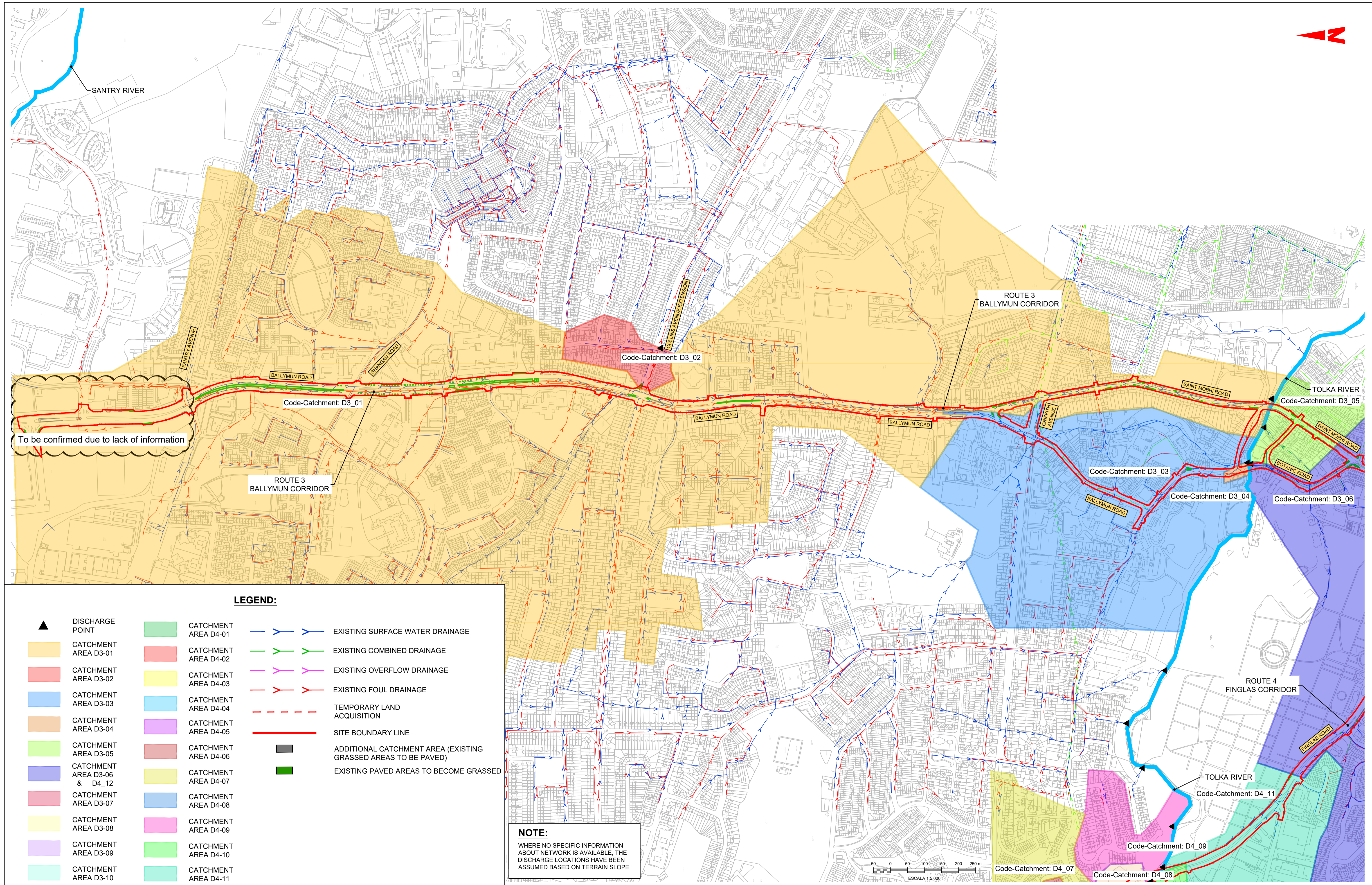
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Client		Engineering Designer		Programme Title	
NTA Údaráis Náisiúnta Iompair National Transport Authority		I-ROD TYPSA		BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS	
Date	Scale	Drawn	Checked	Approved	Drawing Title
13/05/2022	1:10000 @ A1 1:20000 @ A3	ECD	EFD	SMG	BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS. KEYPLAN
Project Code	Originator Code	QMS Code	Drawing File Name	Sheet Number	Status
BCIDD	ROT		BCIDD-ROT-DNG_KP-0304_XX_00-DR-CD-0001	01 of 01	A
					Rev
					M01

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Scale: 1:10,000 @ A1; 1:20,000 @ A3



**LEGEND:**

- |  |                              |  |  |
|--|------------------------------|--|--|
|  | DISCHARGE POINT              |  | EXISTING SURFACE WATER DRAINAGE                                |
|  | CATCHMENT AREA D3-01         |  | EXISTING COMBINED DRAINAGE                                     |
|  | CATCHMENT AREA D3-02         |  | EXISTING OVERFLOW DRAINAGE                                     |
|  | CATCHMENT AREA D3-03         |  | EXISTING FOUL DRAINAGE   |
|  | CATCHMENT AREA D3-04         |  | TEMPORARY LAND ACQUISITION                                     |
|  | CATCHMENT AREA D3-05         |  | SITE BOUNDARY LINE   |
|  | CATCHMENT AREA D3-06 & D4_12 |  | ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED) |
|  | CATCHMENT AREA D3-07         |  | EXISTING PAVED AREAS TO BECOME GRASSED                         |
|  | CATCHMENT AREA D3-08         |  |  |
|  | CATCHMENT AREA D3-09         |  |  |
|  | CATCHMENT AREA D3-10         |  |  |
|  | CATCHMENT AREA D4-01         |  |  |
|  | CATCHMENT AREA D4-02         |  |  |
|  | CATCHMENT AREA D4-03         |  |  |
|  | CATCHMENT AREA D4-04         |  |  |
|  | CATCHMENT AREA D4-05         |  |  |
|  | CATCHMENT AREA D4-06         |  |  |
|  | CATCHMENT AREA D4-07         |  |  |
|  | CATCHMENT AREA D4-08         |  |  |
|  | CATCHMENT AREA D4-09         |  |  |
|  | CATCHMENT AREA D4-10         |  |  |
|  | CATCHMENT AREA D4-11         |  |  |

**NOTE:**  
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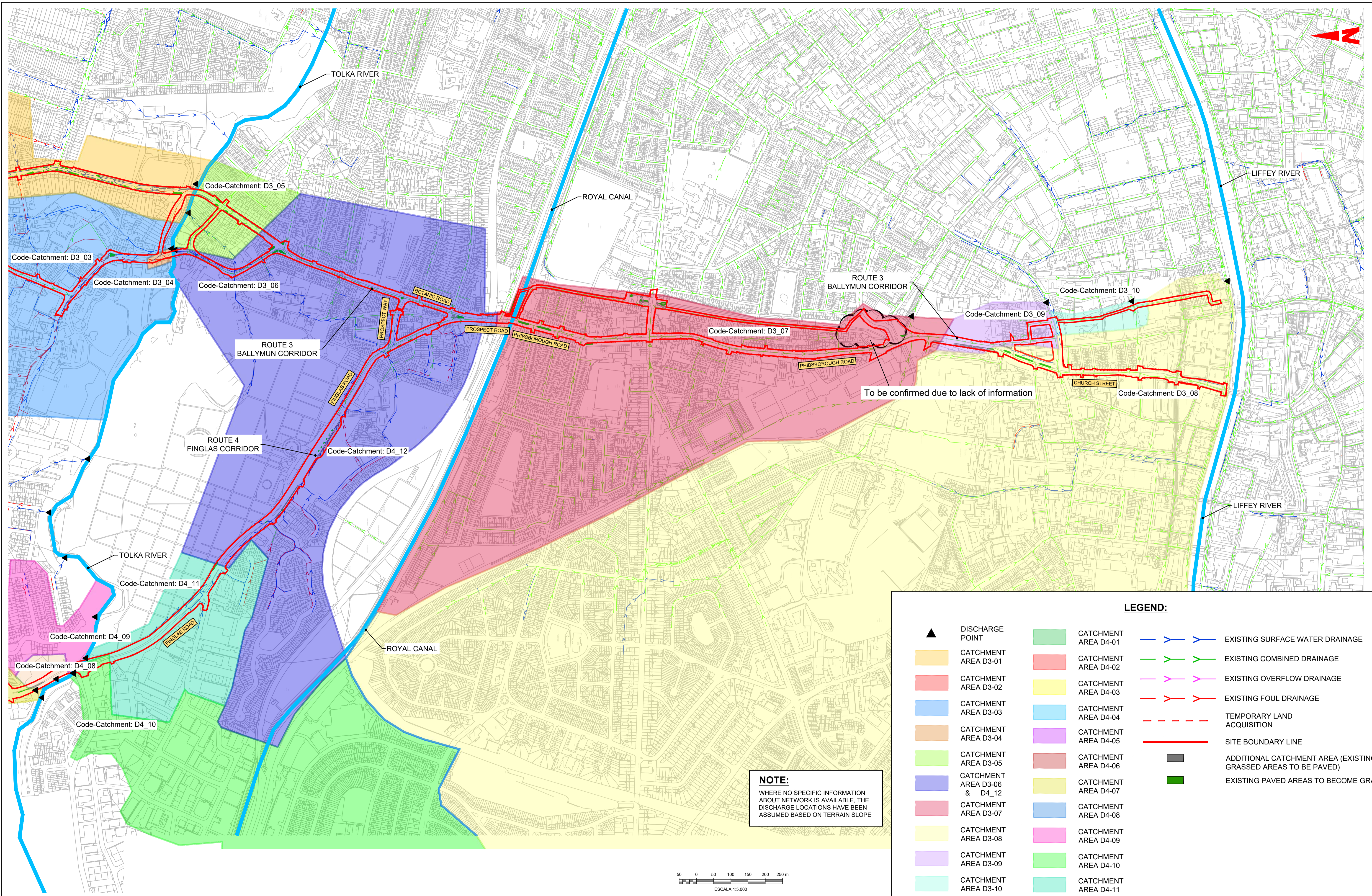
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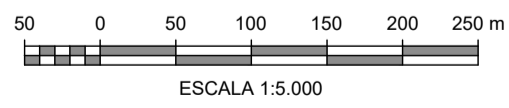
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Client <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer <b>IROD</b> TYPSA		
Date 13/05/2022	Scale 1:5000 @ A1 1:10000 @ A3	Drawn ECD	Checked EFD	Approved SMG
Project Code BCIDD	Originator Code ROT	QMS Code		

Programme Title <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>				
Drawing Title BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME OVERALL CATCHMENT AREAS				
Drawing File Name BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-1001	Sheet Number 1 of 3	Status A	Rev M01	



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**LEGEND:**

- ▲ DISCHARGE POINT
- CATCHMENT AREA D3-01
- CATCHMENT AREA D3-02
- CATCHMENT AREA D3-03
- CATCHMENT AREA D3-04
- CATCHMENT AREA D3-05
- CATCHMENT AREA D3-06 & D4\_12
- CATCHMENT AREA D3-07
- CATCHMENT AREA D3-08
- CATCHMENT AREA D3-09
- CATCHMENT AREA D3-10
- CATCHMENT AREA D4-01
- CATCHMENT AREA D4-02
- CATCHMENT AREA D4-03
- CATCHMENT AREA D4-04
- CATCHMENT AREA D4-05
- CATCHMENT AREA D4-06
- CATCHMENT AREA D4-07
- CATCHMENT AREA D4-08
- CATCHMENT AREA D4-09
- CATCHMENT AREA D4-10
- CATCHMENT AREA D4-11
- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED DRAINAGE
- EXISTING OVERFLOW DRAINAGE
- EXISTING FOUL DRAINAGE
- - - TEMPORARY LAND ACQUISITION
- SITE BOUNDARY LINE
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED

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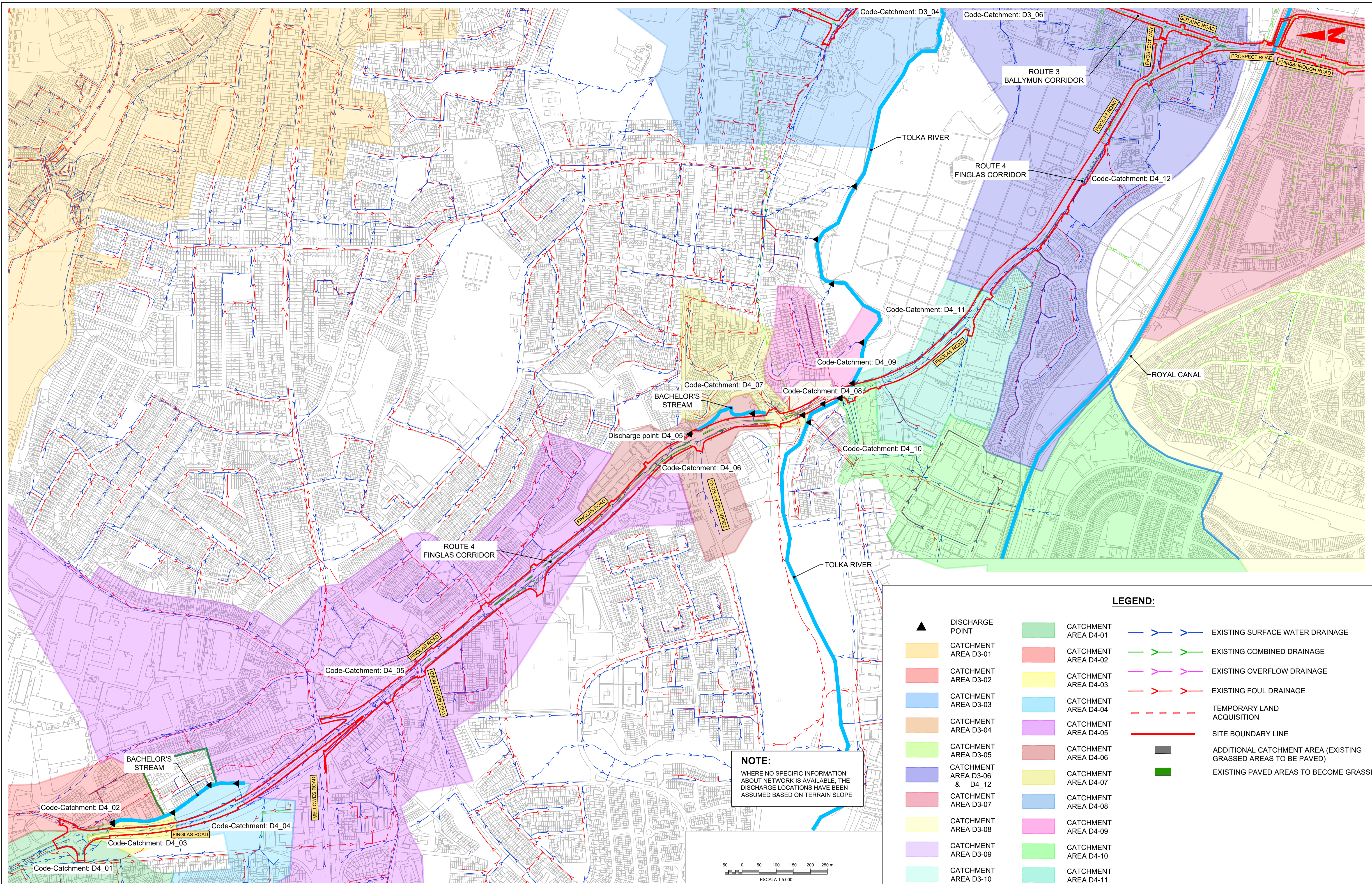


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**LEGEND:**

- ▲ DISCHARGE POINT
- CATCHMENT AREA D3-01
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- CATCHMENT AREA D3-03
- CATCHMENT AREA D3-04
- CATCHMENT AREA D3-05
- CATCHMENT AREA D3-06 & D4\_12
- CATCHMENT AREA D3-07
- CATCHMENT AREA D3-08
- CATCHMENT AREA D3-09
- CATCHMENT AREA D3-10
- CATCHMENT AREA D4-01
- CATCHMENT AREA D4-02
- CATCHMENT AREA D4-03
- CATCHMENT AREA D4-04
- CATCHMENT AREA D4-05
- CATCHMENT AREA D4-06
- CATCHMENT AREA D4-07
- CATCHMENT AREA D4-08
- CATCHMENT AREA D4-09
- CATCHMENT AREA D4-10
- CATCHMENT AREA D4-11
- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED DRAINAGE
- EXISTING OVERFLOW DRAINAGE
- EXISTING FOUL DRAINAGE
- - - TEMPORARY LAND ACQUISITION
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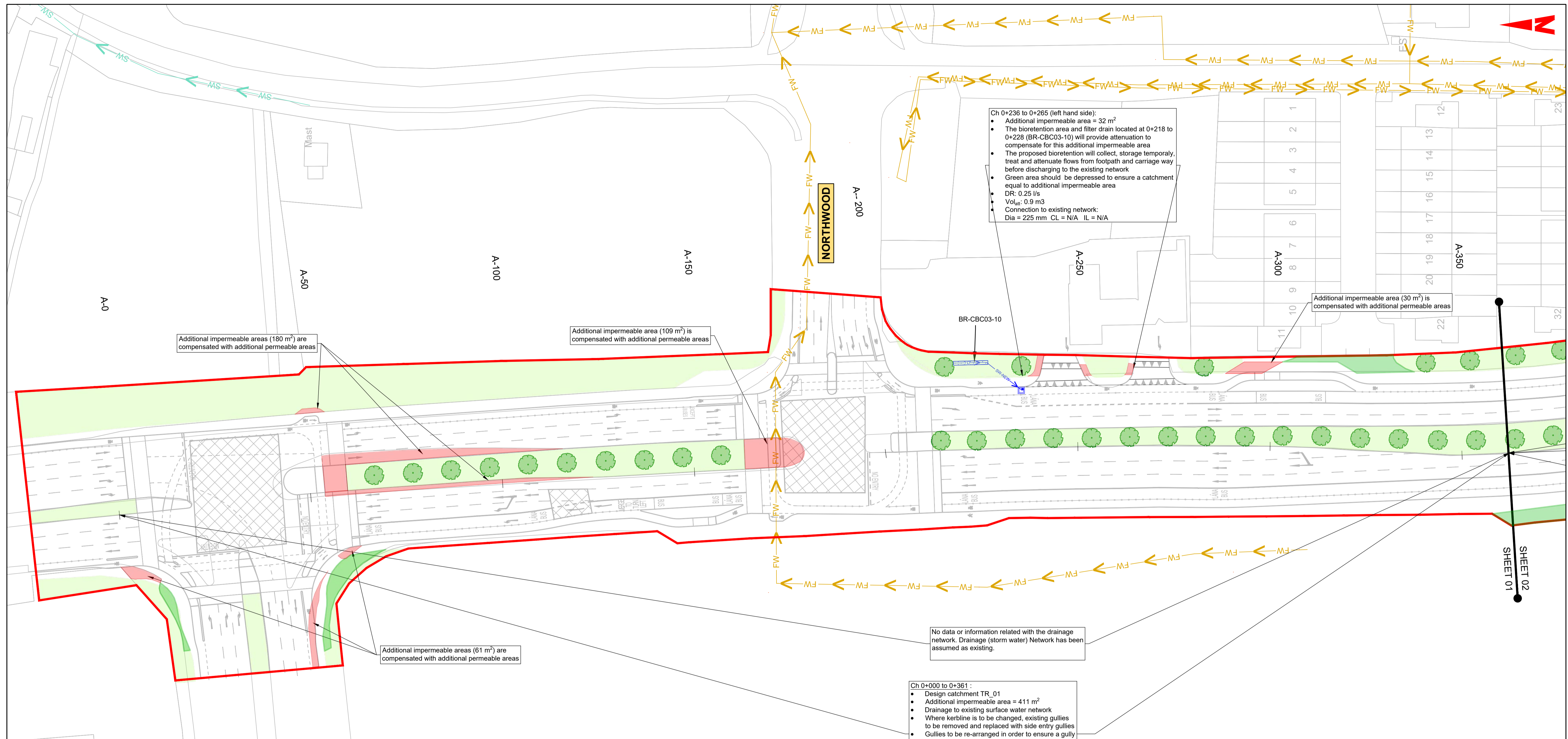


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Additional impermeable areas (180 m<sup>2</sup>) are compensated with additional permeable areas

Additional impermeable area (109 m<sup>2</sup>) is compensated with additional permeable areas

Ch 0+236 to 0+265 (left hand side):

- Additional impermeable area = 32 m<sup>2</sup>
- The bioretention area and filter drain located at 0+218 to 0+228 (BR-CBC03-10) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- Green area should be depressed to ensure a catchment equal to additional impermeable area
- DR: 0.25 l/s
- Vol<sub>att</sub>: 0.9 m<sup>3</sup>
- Connection to existing network:
- Dia = 225 mm CL = N/A IL = N/A

Additional impermeable area (30 m<sup>2</sup>) is compensated with additional permeable areas

Additional impermeable areas (61 m<sup>2</sup>) are compensated with additional permeable areas

No data or information related with the drainage network. Drainage (storm water) Network has been assumed as existing.

Ch 0+000 to 0+361 :

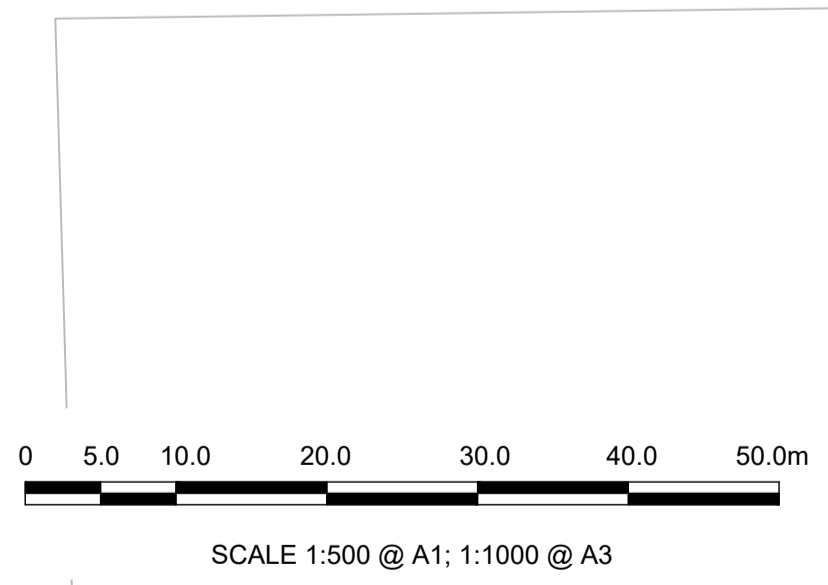
- Design catchment TR\_01
- Additional impermeable area = 411 m<sup>2</sup>
- Drainage to existing surface water network
- Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies
- Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)
- No data of existing water network. Need to be confirmed

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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<sub>att</sub>: VOLUME OF ATTENUATION

ST. MARGARETS 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 DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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

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

Engineering Designer: **IJROD** TYPSA

Date	Scale	Drawn	Checked	Approved
13/05/2022	1:500 @ A1 1:1000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCDD	ROT			

Programme Title: **BUSCONNECTS DUBLIN**

Drawing Title: **CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

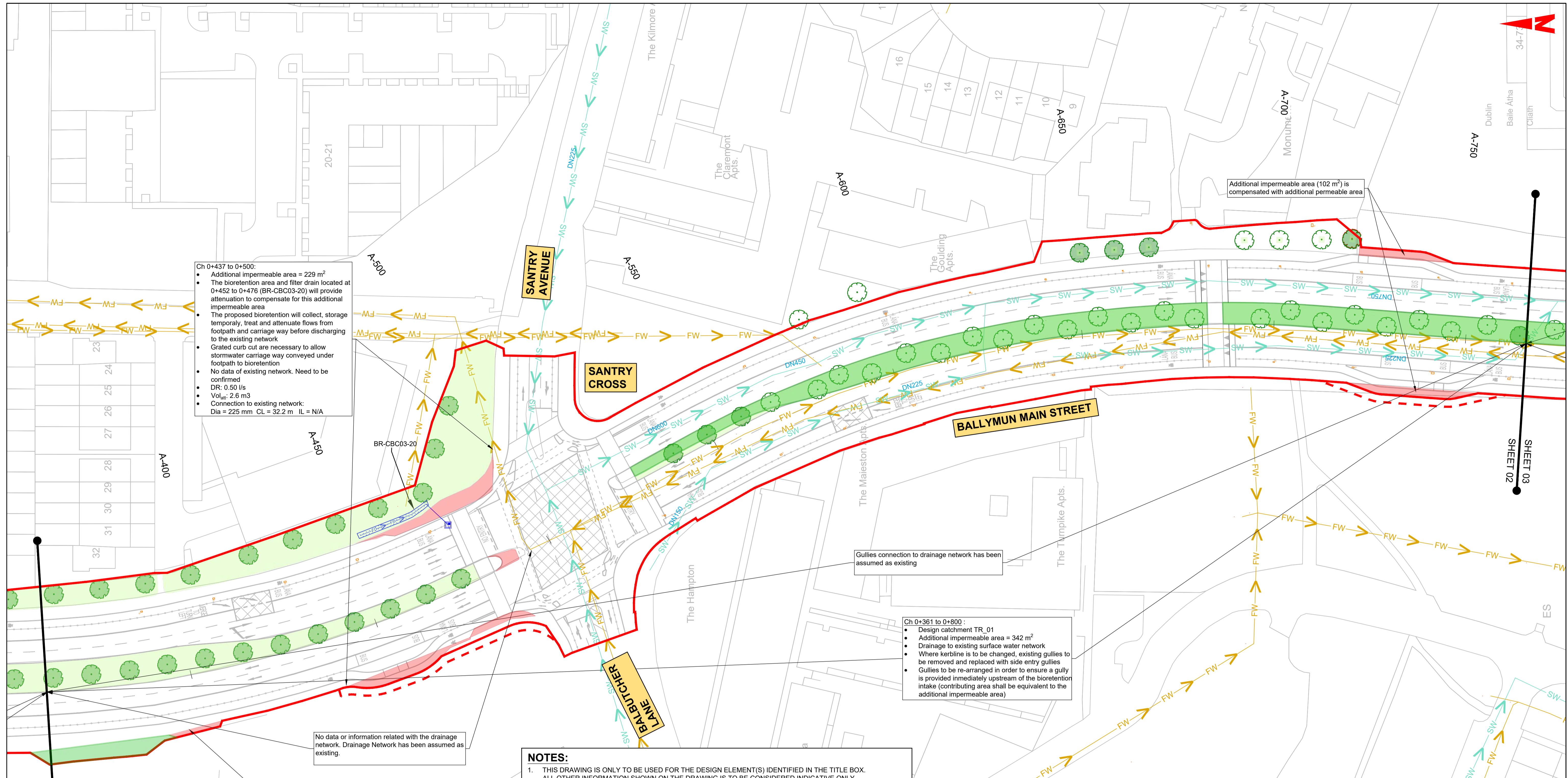
Drawing File Name: BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0001

Sheet Number: 01 of 38

Status: A

Rev: M01

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Ch 0+437 to 0+500:

- Additional impermeable area = 229 m<sup>2</sup>
- The bioretention area and filter drain located at 0+452 to 0+476 (BR-CBC03-20) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- Grated curb cut are necessary to allow stormwater carriage way conveyed under footpath to bioretention
- No data of existing network. Need to be confirmed
- DR: 0.50 l/s
- Vol<sub>att</sub>: 2.6 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 32.2 m IL = N/A

Ch 0+361 to 0+800:

- Design catchment TR\_01
- Additional impermeable area = 342 m<sup>2</sup>
- Drainage to existing surface water network
- Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies
- Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)

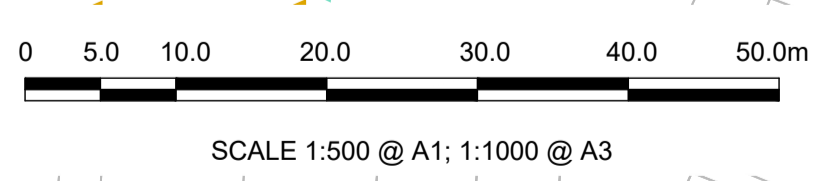
No data or information related with the drainage network. Drainage Network has been assumed as existing.

Additional impermeable area (11 m<sup>2</sup>) is compensated with additional permeable areas

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4. ALL LEVELS ARE IN METRES ABOVE ORDANCE 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<sub>att</sub>: 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 DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **JROD**  
 TYPSA

Date	Scale	Drawn	Checked	Approved
13/05/2022	1:500 @ A1 1:1000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCIDD	ROT			

Programme Title: **BUSCONNECTS DUBLIN**

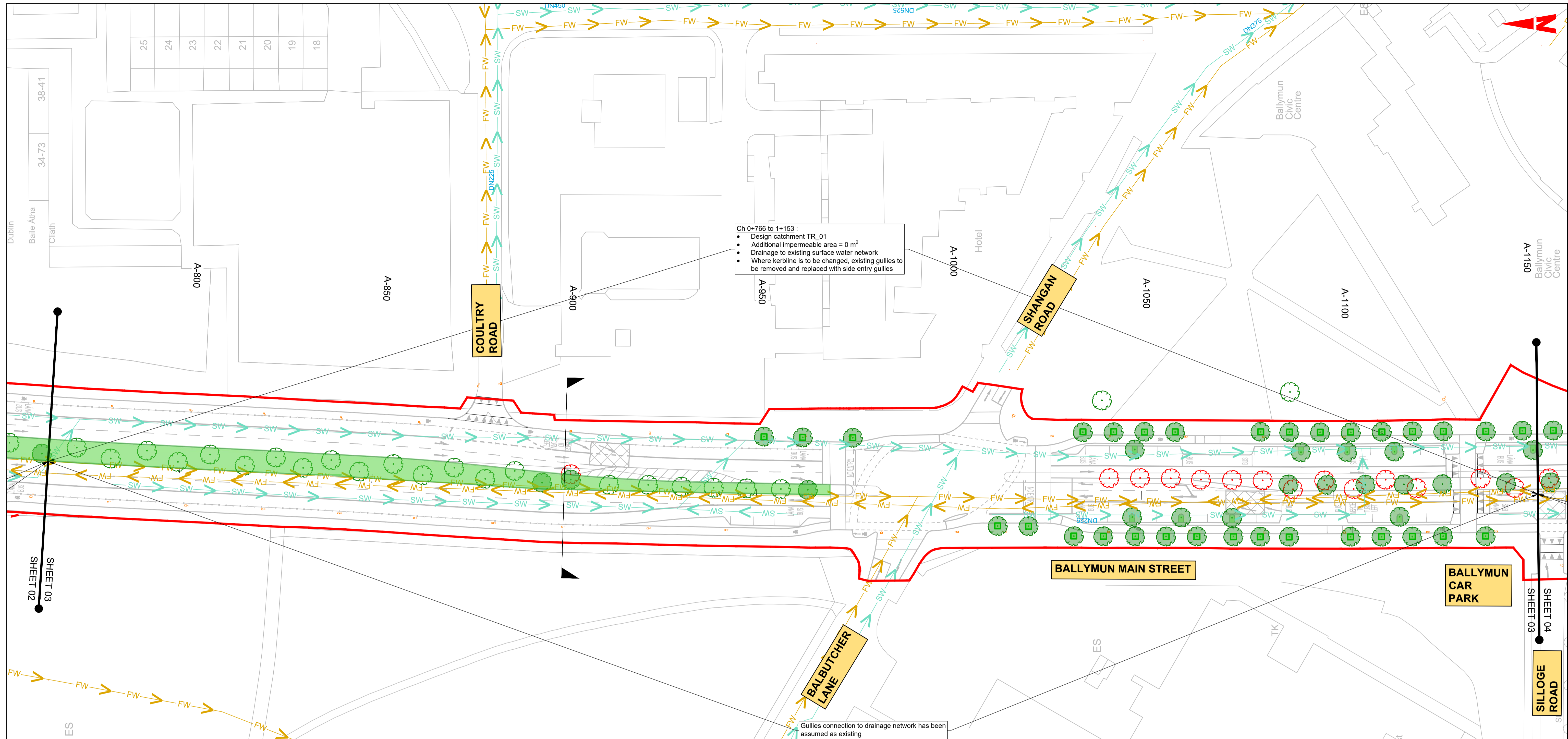
**CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

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

Drawing File Name	Sheet Number	Status	Rev
BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0002	02 of 38	A	M01

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Ch 0+766 to 1+153 :

- Design catchment TR\_01
- Additional impermeable area = 0 m<sup>2</sup>
- Drainage to existing surface water network
- Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies

Gullies connection to drainage network has been assumed as existing

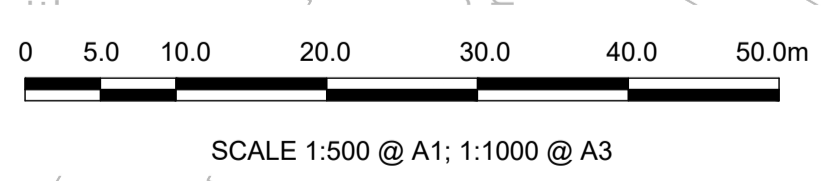
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  6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
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  9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
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  11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: 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 DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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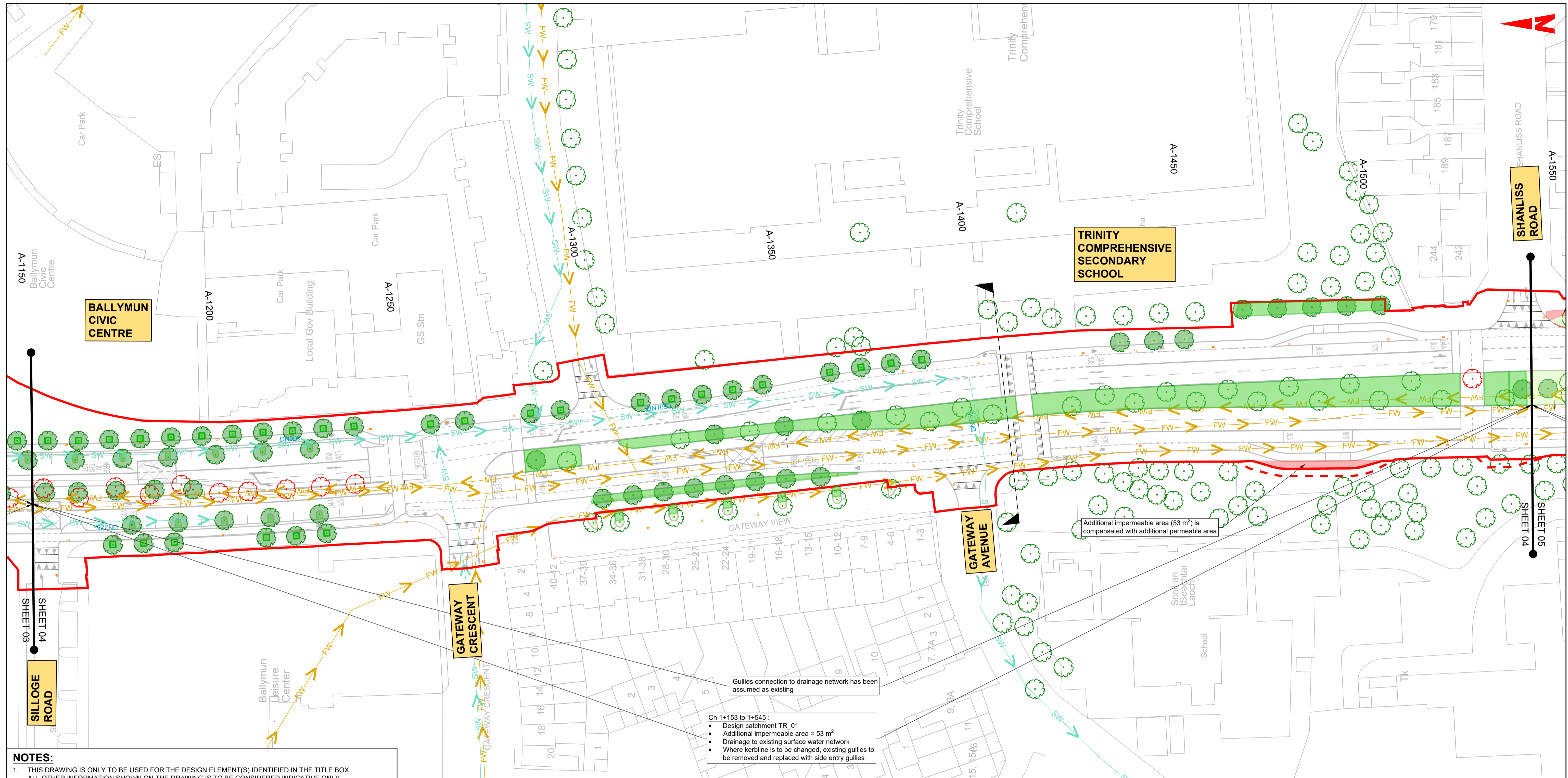


Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

Client <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer <b>JROD</b> TYPSA		
Date 13/05/2022	Scale 1:500 @ A1 1:1000 @ A3	Drawn ECD	Checked EFD	Approved SMG
Project Code BCDD	Originator Code ROT	QMS Code		

Programme Title <b>BUSCONNECTS DUBLIN</b>			
Drawing Title <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing File Name BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0003			
Sheet Number 03 of 38	Status A	Rev M01	

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

**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: VOLUME OF ATTENUATION

Ch 1+153 to 1+545:  
 • Design catchment TR\_01  
 • Additional impermeable area = 53 m<sup>2</sup>  
 • Drainage to existing surface water network  
 • Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies

Additional impermeable area (53 m<sup>2</sup>) is compensated with additional permeable area

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

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**Project Ireland 2040**  
 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

**Engineering Designer:** JROD  
 TYPSA

Date: 13/05/2022  
 Scale: 1:500 @ A1, 1:1000 @ A3  
 Project Code: BCIDD  
 Originator Code: ROT

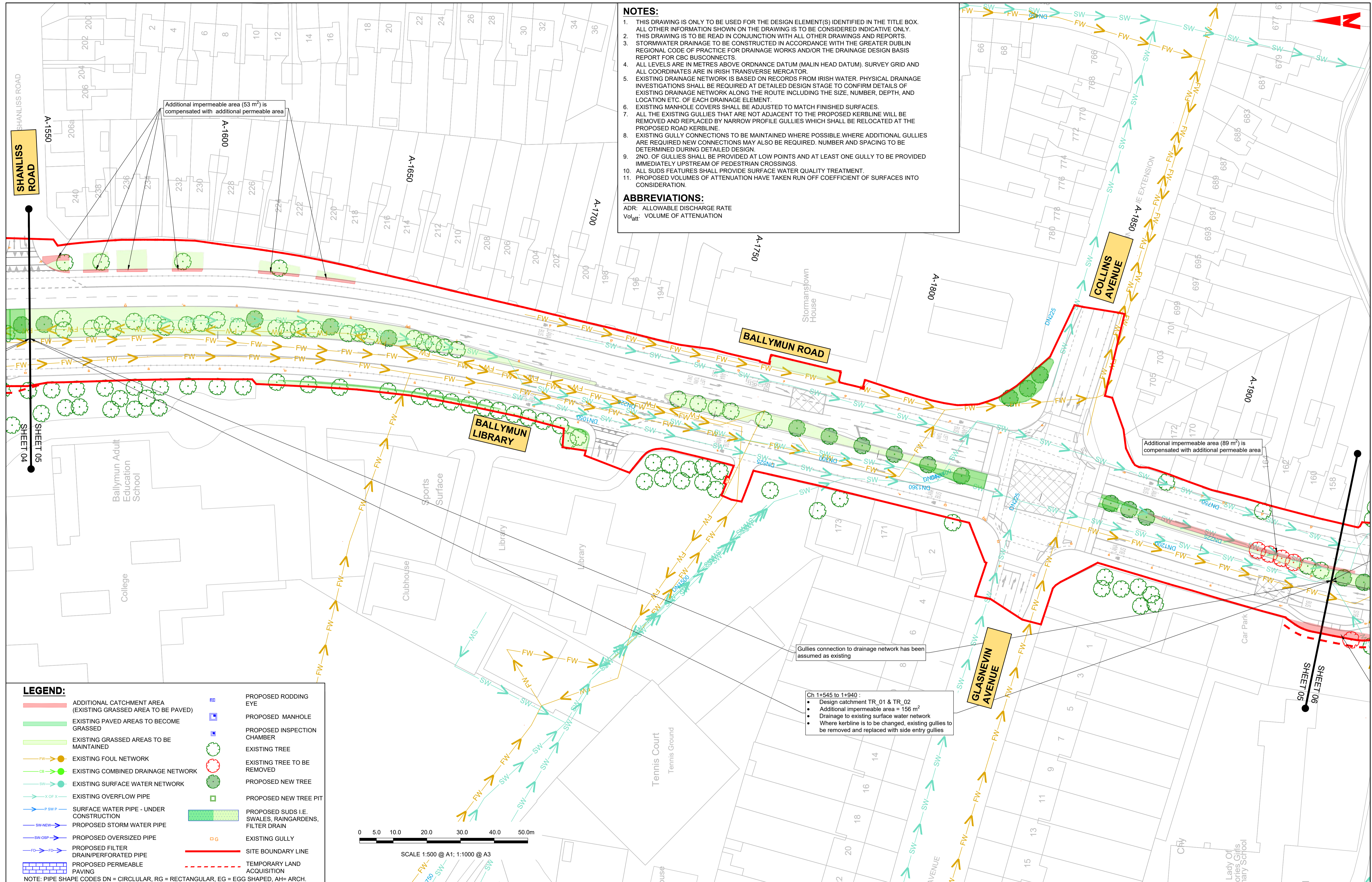
Drawn: ECD  
 Checked: EFD  
 Approved: SMG

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

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

Drawing File Name: BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0004  
 Sheet Number: 04 of 38  
 Status: A  
 Rev: M01

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**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: VOLUME OF ATTENUATION

Additional impermeable area (53 m<sup>2</sup>) is compensated with additional permeable area

Additional impermeable area (89 m<sup>2</sup>) is compensated with additional permeable area

Gullies connection to drainage network has been assumed as existing

Ch 1+545 to 1+940:  
 • Design catchment TR\_01 & TR\_02  
 • Additional impermeable area = 156 m<sup>2</sup>  
 • Drainage to existing surface water network  
 • Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies

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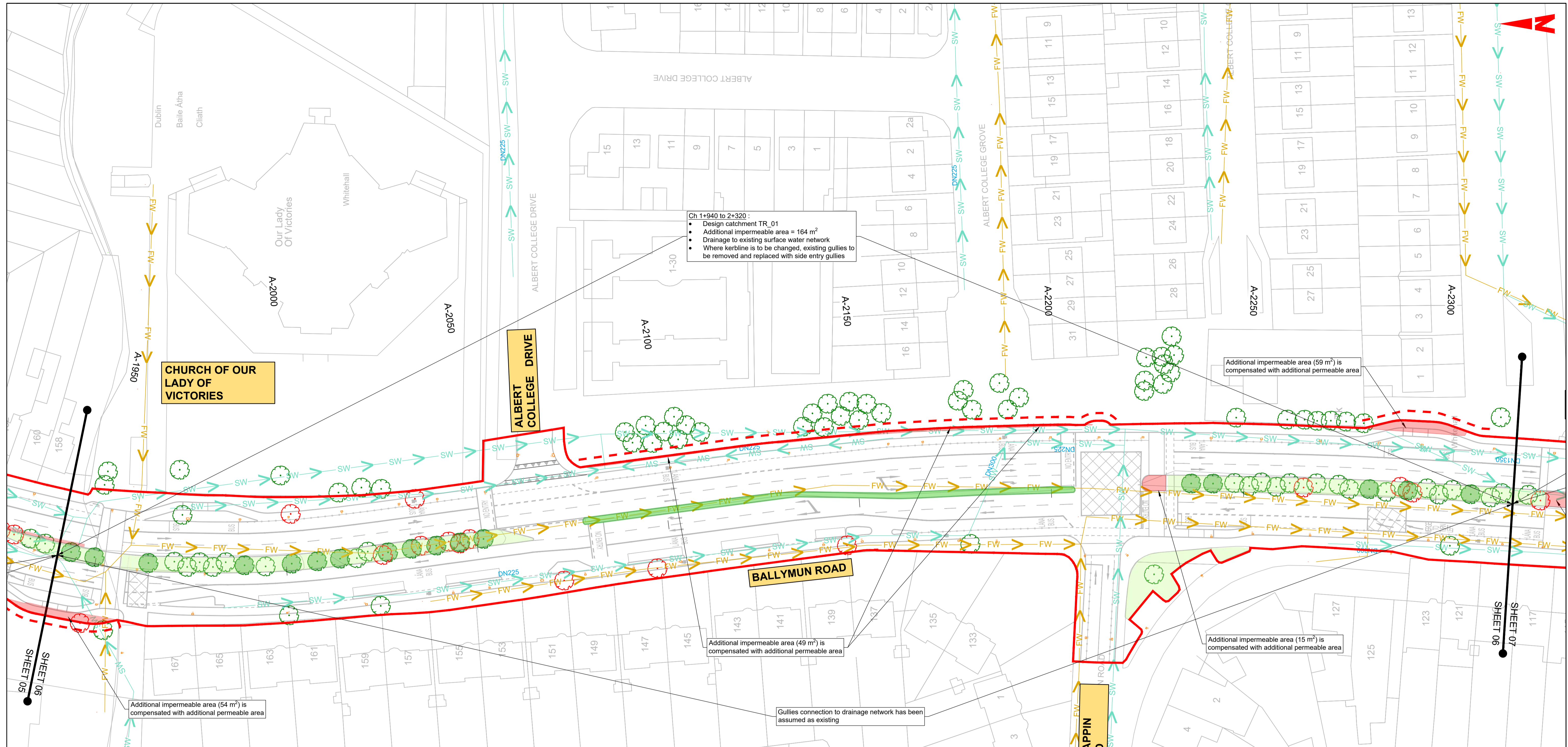
Client: **NTA**  
 Údarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer: **IJROD**  
 IJROD  
 TYPSA

Date	Scale	Drawn	Checked	Approved
13/05/2022	1:500 @ A1 1:1000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCDD	ROT			

Programme Title			
BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title			
BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0005	05 of 38	A	M01

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**LEGEND:**

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		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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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<sub>att</sub>: VOLUME OF ATTENUATION

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Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **IJROD**  
TYPSA

Date: 13/05/2022  
Scale: 1:500 @ A1  
1:1000 @ A3

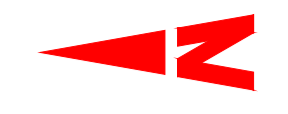
Drawn: ECD  
Checked: EFD  
Approved: SMG

Project Code: BCDD  
Originator Code: ROT

QMS Code

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: <b>BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME</b>			
PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0006	Sheet Number: 06 of 38	Status: A	Rev: M01

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**ABBREVIATIONS:**

ADR: ALLOWABLE DISCHARGE RATE  
Vol<sub>att</sub>: VOLUME OF ATTENUATION

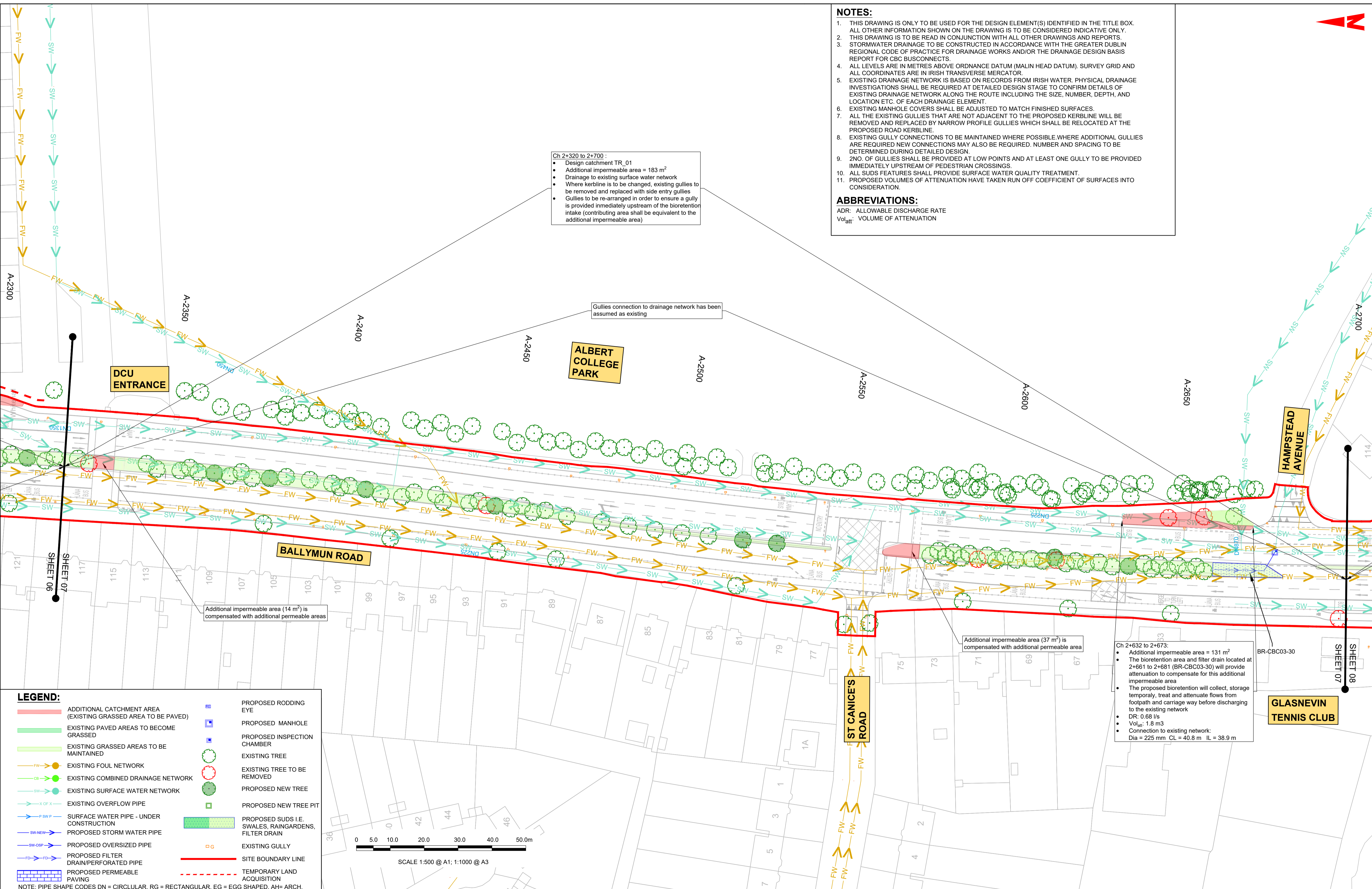
Ch 2+320 to 2+700 :  
 • Design catchment TR\_01  
 • Additional impermeable area = 183 m<sup>2</sup>  
 • Drainage to existing surface water network  
 • Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies  
 • Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)

Gullies connection to drainage network has been assumed as existing

Additional impermeable area (14 m<sup>2</sup>) is compensated with additional permeable areas

Additional impermeable area (37 m<sup>2</sup>) is compensated with additional permeable area

Ch 2+632 to 2+673:  
 • Additional impermeable area = 131 m<sup>2</sup>  
 • The bioretention area and filter drain located at 2+661 to 2+681 (BR-CBC03-30) will provide attenuation to compensate for this additional impermeable area  
 • The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network  
 • DR: 0.68 l/s  
 • Vol<sub>att</sub>: 1.8 m<sup>3</sup>  
 • Connection to existing network:  
 Dia = 225 mm CL = 40.8 m IL = 38.9 m



**LEGEND:**

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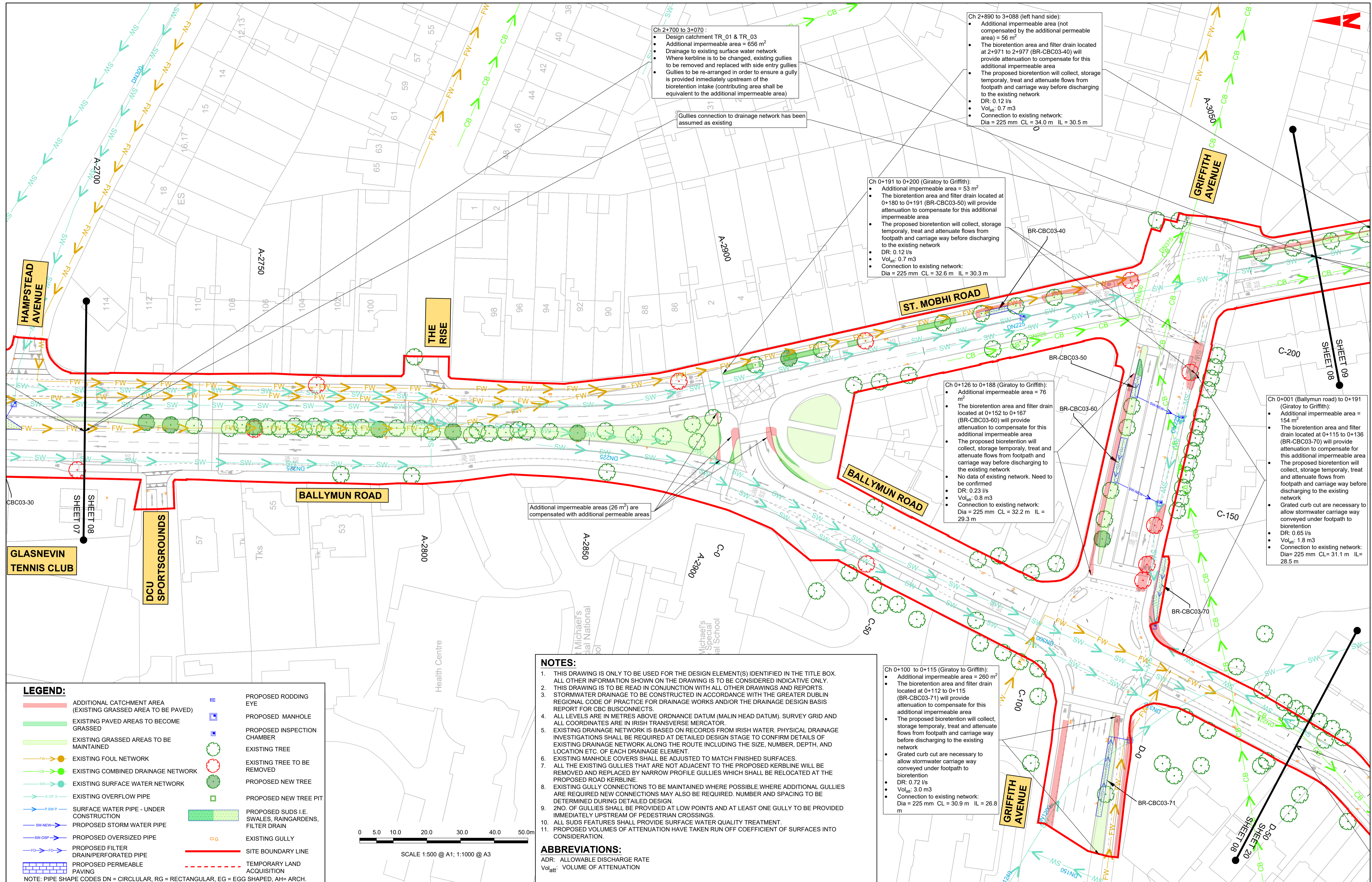


Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

Client <b>NTA</b> Údaráis Náisiúnta Iompair National Transport Authority		Engineering Designer <b>IJROD</b> TYPSA		
Date 13/05/2022	Scale 1:500 @ A1 1:1000 @ A3	Drawn ECD	Checked EFD	Approved SMG
Project Code BCIDD	Originator Code ROT	QMS Code		

Programme Title <b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>				
Drawing Title BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS				
Drawing File Name BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0007	Sheet Number 07 of 38	Status A	Rev M01	

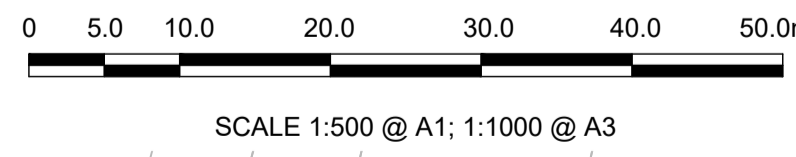
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	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
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Client <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer <b>IJROD</b> TYPSA	
Date 13/05/2022	Scale 1:500 @ A1 1:1000 @ A3	Drawn ECD	Checked EFD
Project Code BCIDD	Originator Code ROT	Approved SMG	

Programme Title <b>BUSCONNECTS DUBLIN</b>			
CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0008	Sheet Number 08 of 38	Status A	Rev M01

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**LEGEND:**

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

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**Ch 3+366 to 3+411 (left hand side):**

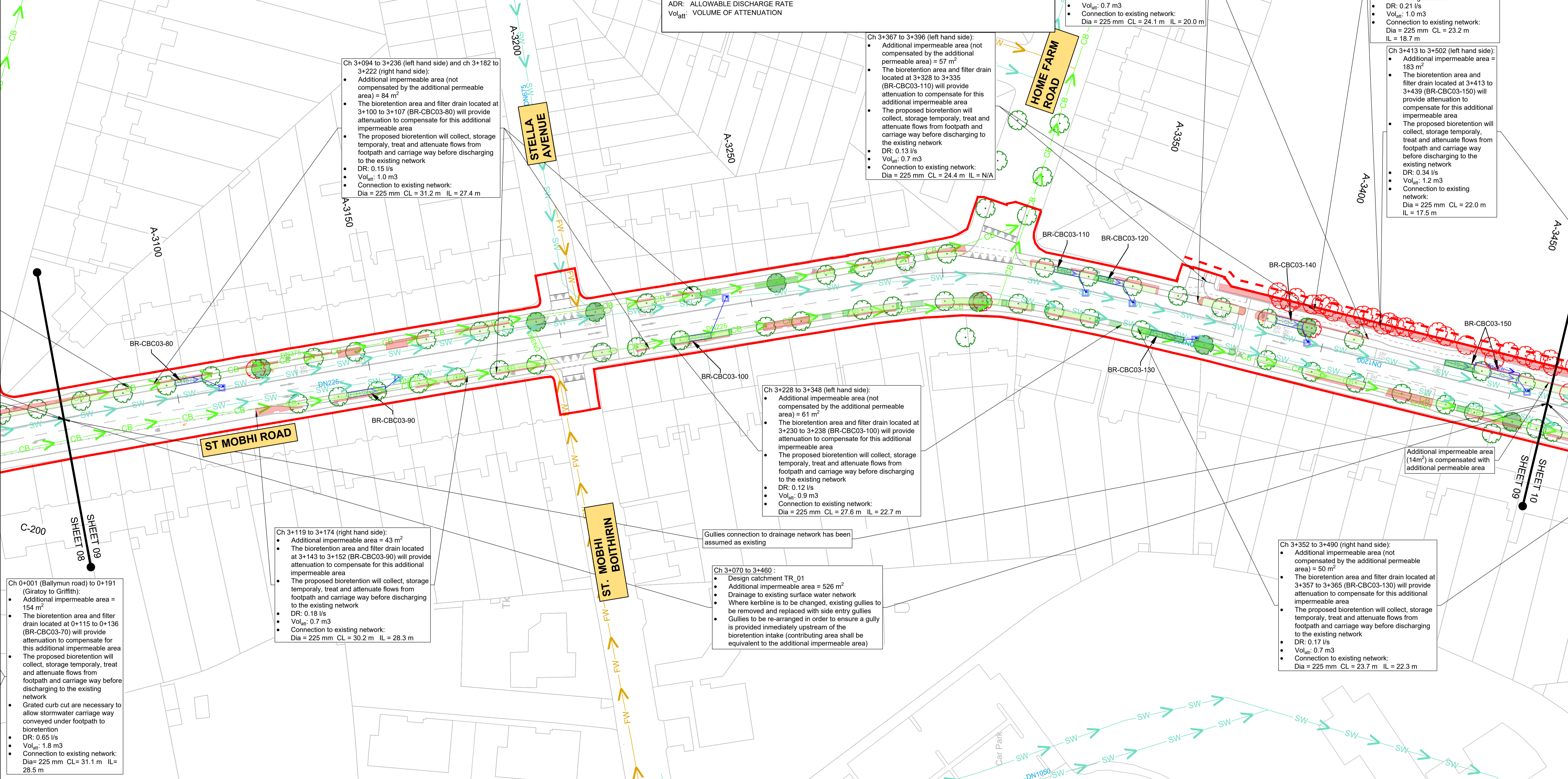
- Additional impermeable area = 60 m<sup>2</sup>
- The bioretention area and filter drain located at 3+340 to 3+346 (BR-CBC03-120) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.13 l/s
- Vol<sub>att</sub>: 0.7 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 24.1 m IL = 20.0 m

**Ch 3+396 to 3+413 (left hand side):**

- Additional impermeable area = 61 m<sup>2</sup>
- The bioretention area and filter drain located at 3+386 to 3+394 (BR-CBC03-140) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.21 l/s
- Vol<sub>att</sub>: 1.0 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 23.2 m IL = 18.7 m

**Ch 3+413 to 3+502 (left hand side):**

- Additional impermeable area = 183 m<sup>2</sup>
- The bioretention area and filter drain located at 3+413 to 3+439 (BR-CBC03-150) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.34 l/s
- Vol<sub>att</sub>: 1.2 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 22.0 m IL = 17.5 m



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**Project Ireland 2040**  
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **IJROD** TYPSA

Date: 13/05/2022 Scale: 1:500 @ A1; 1:1000 @ A3

Project Code: BCIDD Originator Code: ROT

QMS Code: ECD EFD Approved: SMG

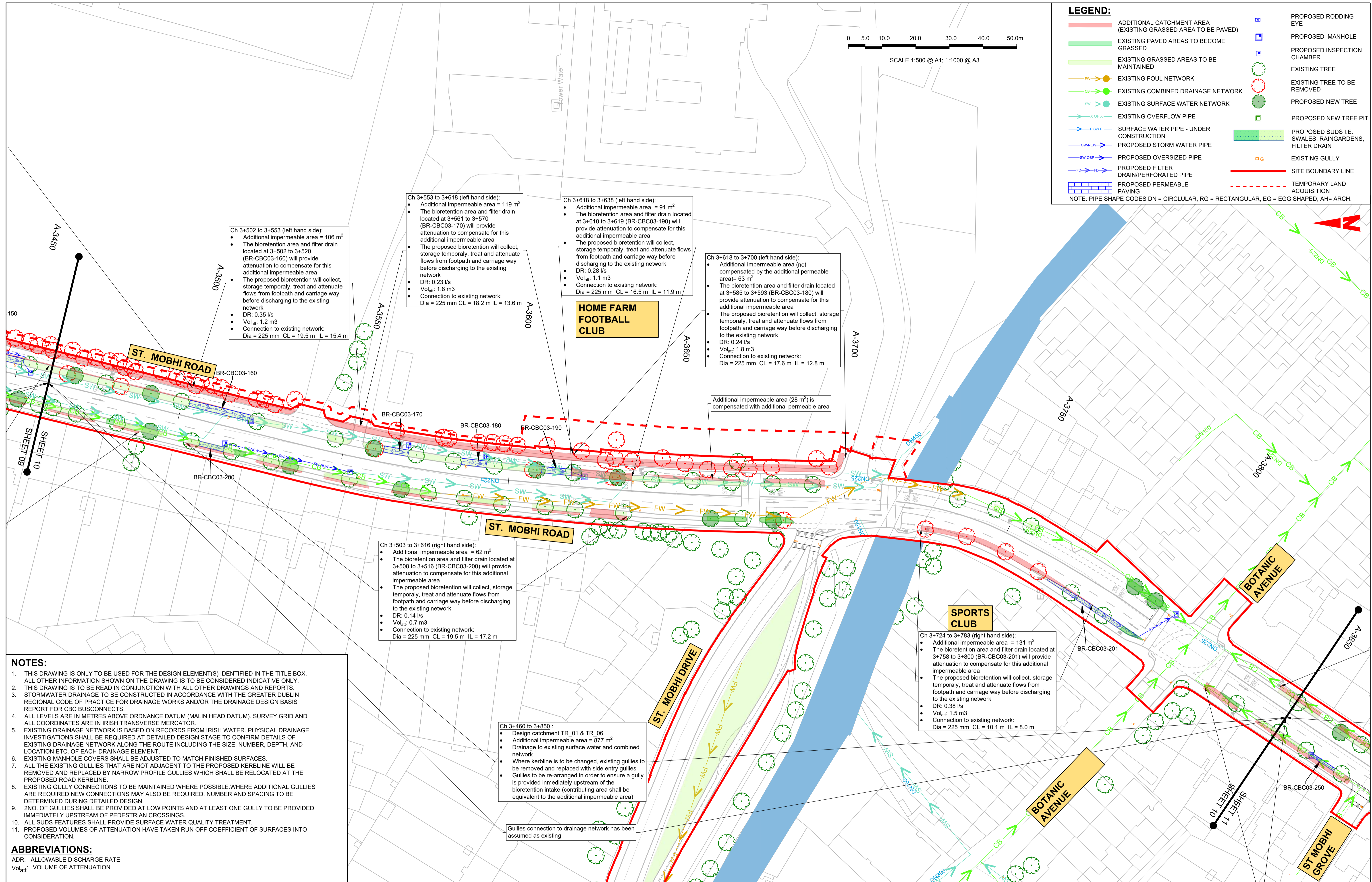
Programme Title: **BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

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

Drawing File Name: BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0009

Sheet Number: 09 of 38 Status: A Rev: M01

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**LEGEND:**

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

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

- Ch 3+502 to 3+553 (left hand side):**
  - Additional impermeable area = 106 m<sup>2</sup>
  - The bioretention area and filter drain located at 3+502 to 3+520 (BR-CBC03-160) will provide attenuation to compensate for this additional impermeable area
  - The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
  - DR: 0.35 l/s
  - Vol<sub>att</sub>: 1.2 m<sup>3</sup>
  - Connection to existing network: Dia = 225 mm CL = 19.5 m IL = 15.4 m
- Ch 3+553 to 3+618 (left hand side):**
  - Additional impermeable area = 119 m<sup>2</sup>
  - The bioretention area and filter drain located at 3+561 to 3+570 (BR-CBC03-170) will provide attenuation to compensate for this additional impermeable area
  - The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
  - DR: 0.23 l/s
  - Vol<sub>att</sub>: 1.8 m<sup>3</sup>
  - Connection to existing network: Dia = 225 mm CL = 18.2 m IL = 13.6 m
- Ch 3+618 to 3+638 (left hand side):**
  - Additional impermeable area = 91 m<sup>2</sup>
  - The bioretention area and filter drain located at 3+610 to 3+619 (BR-CBC03-190) will provide attenuation to compensate for this additional impermeable area
  - The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
  - DR: 0.28 l/s
  - Vol<sub>att</sub>: 1.1 m<sup>3</sup>
  - Connection to existing network: Dia = 225 mm CL = 16.5 m IL = 11.9 m
- Ch 3+618 to 3+700 (left hand side):**
  - Additional impermeable area (not compensated by the additional permeable area) = 63 m<sup>2</sup>
  - The bioretention area and filter drain located at 3+585 to 3+593 (BR-CBC03-180) will provide attenuation to compensate for this additional impermeable area
  - The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
  - DR: 0.24 l/s
  - Vol<sub>att</sub>: 1.8 m<sup>3</sup>
  - Connection to existing network: Dia = 225 mm CL = 17.6 m IL = 12.8 m
- Ch 3+503 to 3+616 (right hand side):**
  - Additional impermeable area = 62 m<sup>2</sup>
  - The bioretention area and filter drain located at 3+508 to 3+516 (BR-CBC03-200) will provide attenuation to compensate for this additional impermeable area
  - The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
  - DR: 0.14 l/s
  - Vol<sub>att</sub>: 0.7 m<sup>3</sup>
  - Connection to existing network: Dia = 225 mm CL = 19.5 m IL = 17.2 m
- Ch 3+724 to 3+783 (right hand side):**
  - Additional impermeable area = 131 m<sup>2</sup>
  - The bioretention area and filter drain located at 3+758 to 3+800 (BR-CBC03-201) will provide attenuation to compensate for this additional impermeable area
  - The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
  - DR: 0.38 l/s
  - Vol<sub>att</sub>: 1.5 m<sup>3</sup>
  - Connection to existing network: Dia = 225 mm CL = 10.1 m IL = 8.0 m

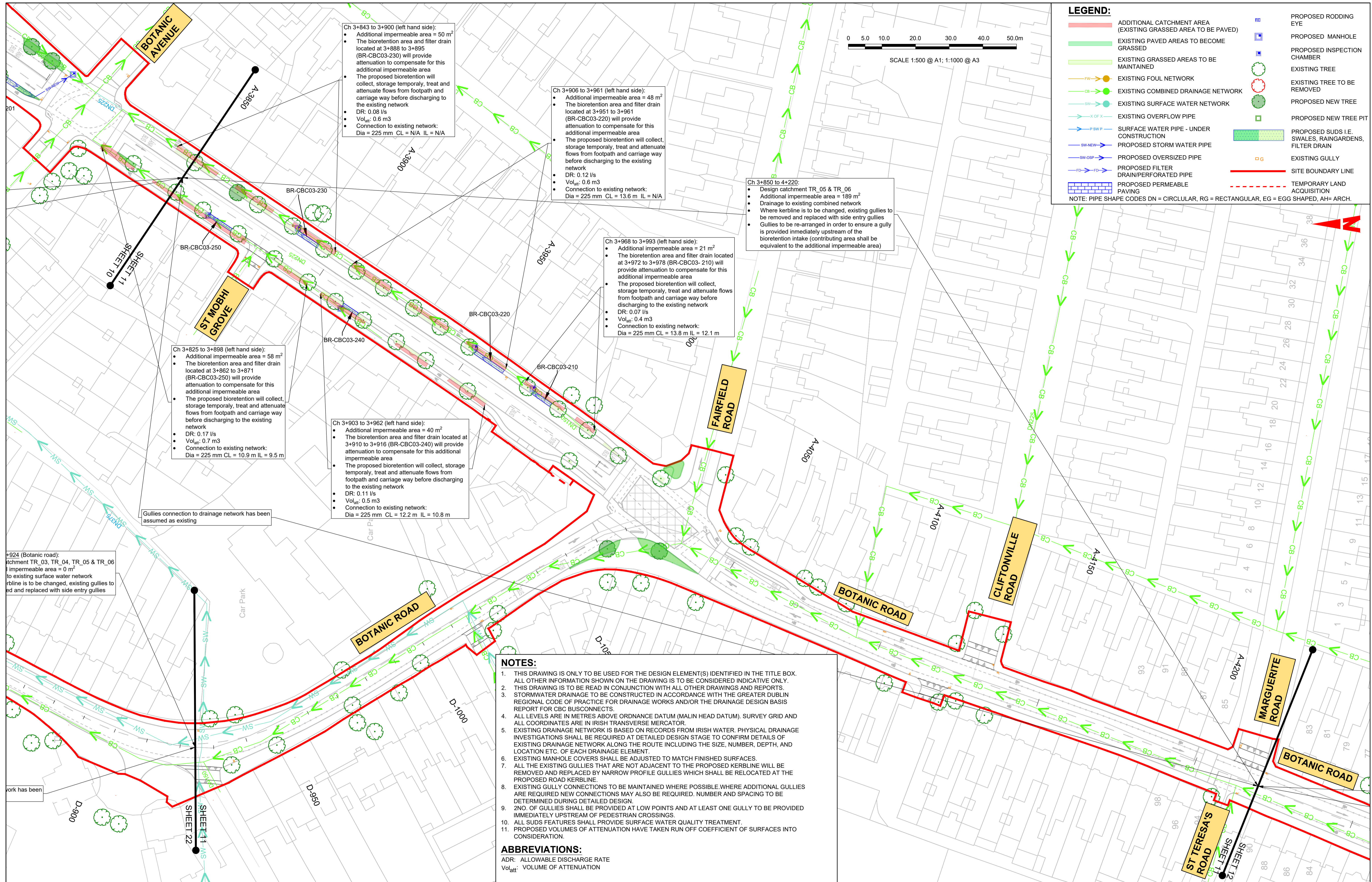
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  - PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: VOLUME OF ATTENUATION

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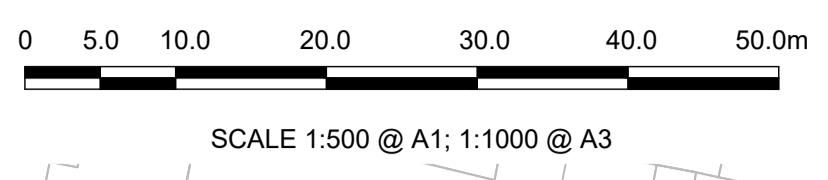




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Ch 3+843 to 3+900 (left hand side):

- Additional impermeable area = 50 m<sup>2</sup>
- The bioretention area and filter drain located at 3+888 to 3+895 (BR-CBC03-230) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.08 l/s
- Vol<sub>att</sub>: 0.6 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = N/A IL = N/A

Ch 3+906 to 3+961 (left hand side):

- Additional impermeable area = 48 m<sup>2</sup>
- The bioretention area and filter drain located at 3+951 to 3+961 (BR-CBC03-220) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.12 l/s
- Vol<sub>att</sub>: 0.6 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 13.6 m IL = N/A

Ch 3+850 to 4+220:

- Design catchment TR\_05 & TR\_06
- Additional impermeable area = 189 m<sup>2</sup>
- Drainage to existing combined network
- Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies
- Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)

Ch 3+968 to 3+993 (left hand side):

- Additional impermeable area = 21 m<sup>2</sup>
- The bioretention area and filter drain located at 3+972 to 3+978 (BR-CBC03-210) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.07 l/s
- Vol<sub>att</sub>: 0.4 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 13.8 m IL = 12.1 m

Ch 3+903 to 3+962 (left hand side):

- Additional impermeable area = 40 m<sup>2</sup>
- The bioretention area and filter drain located at 3+910 to 3+916 (BR-CBC03-240) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.11 l/s
- Vol<sub>att</sub>: 0.5 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 12.2 m IL = 10.8 m

Ch 3+825 to 3+898 (left hand side):

- Additional impermeable area = 58 m<sup>2</sup>
- The bioretention area and filter drain located at 3+862 to 3+871 (BR-CBC03-250) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.17 l/s
- Vol<sub>att</sub>: 0.7 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 10.9 m IL = 9.5 m

Gullies connection to drainage network has been assumed as existing

+924 (Botanic road):

- Attachment TR\_03, TR\_04, TR\_05 & TR\_06
- Impermeable area = 0 m<sup>2</sup>
- Drainage to existing surface water network
- Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies

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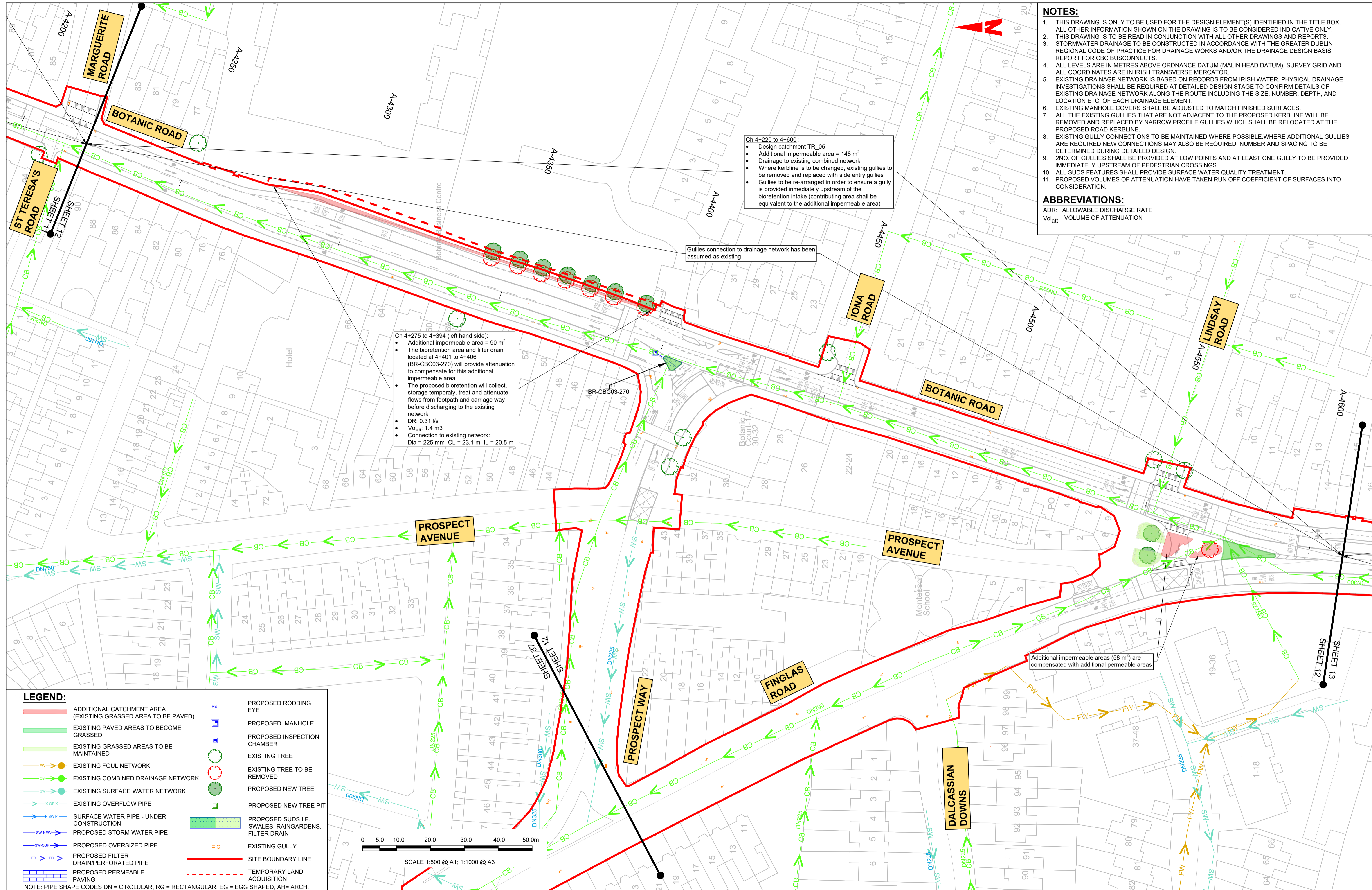


Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

Client <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer <b>IJROD</b> Ireland's Road & Street TYPSA		
Date 13/05/2022	Scale 1:500 @ A1 1:1000 @ A3	Drawn ECD	Checked EFD	Approved SMG
Project Code BCDD	Originator Code ROT	QMS Code		

Programme Title <b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0011	Sheet Number 11 of 38	Status A	Rev M01

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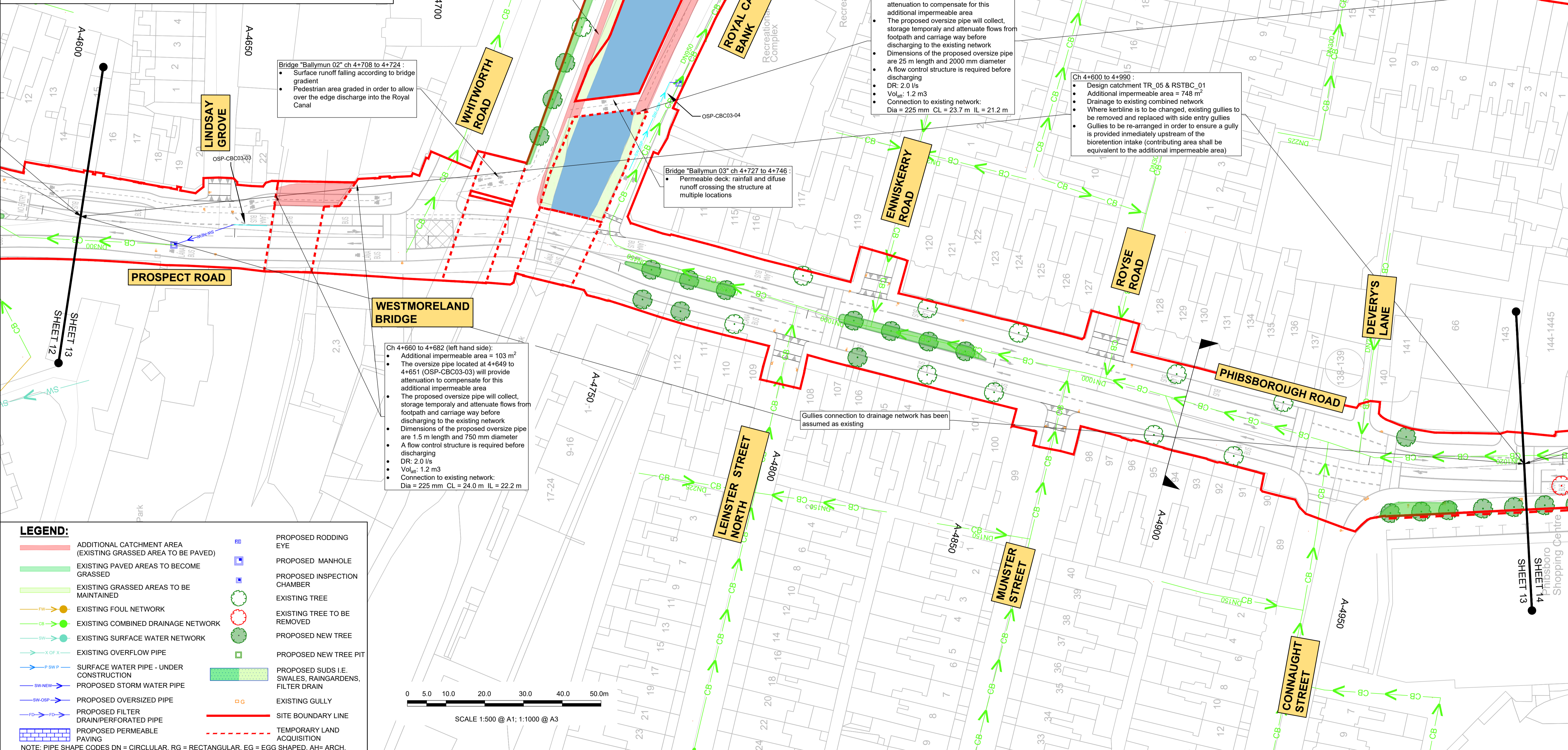
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  - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
  - PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: 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 DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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

**Scale:** 1:500 @ A1; 1:1000 @ A3

**Scale bar:** 0 5.0 10.0 20.0 30.0 40.0 50.0m

**Project Ireland 2040**  
Building Ireland's Future

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Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

**Client:** National Transport Authority

**Engineering Designer:** JROD

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

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

**Date:** 13/05/2022

**Scale:** 1:500 @ A1; 1:1000 @ A3

**Drawn:** ECD

**Checked:** EFD

**Approved:** SMG

**Project Code:** BCDD

**Originator Code:** ROT

**QMS Code:**

**Drawing File Name:** BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0013

**Sheet Number:** 13 of 38

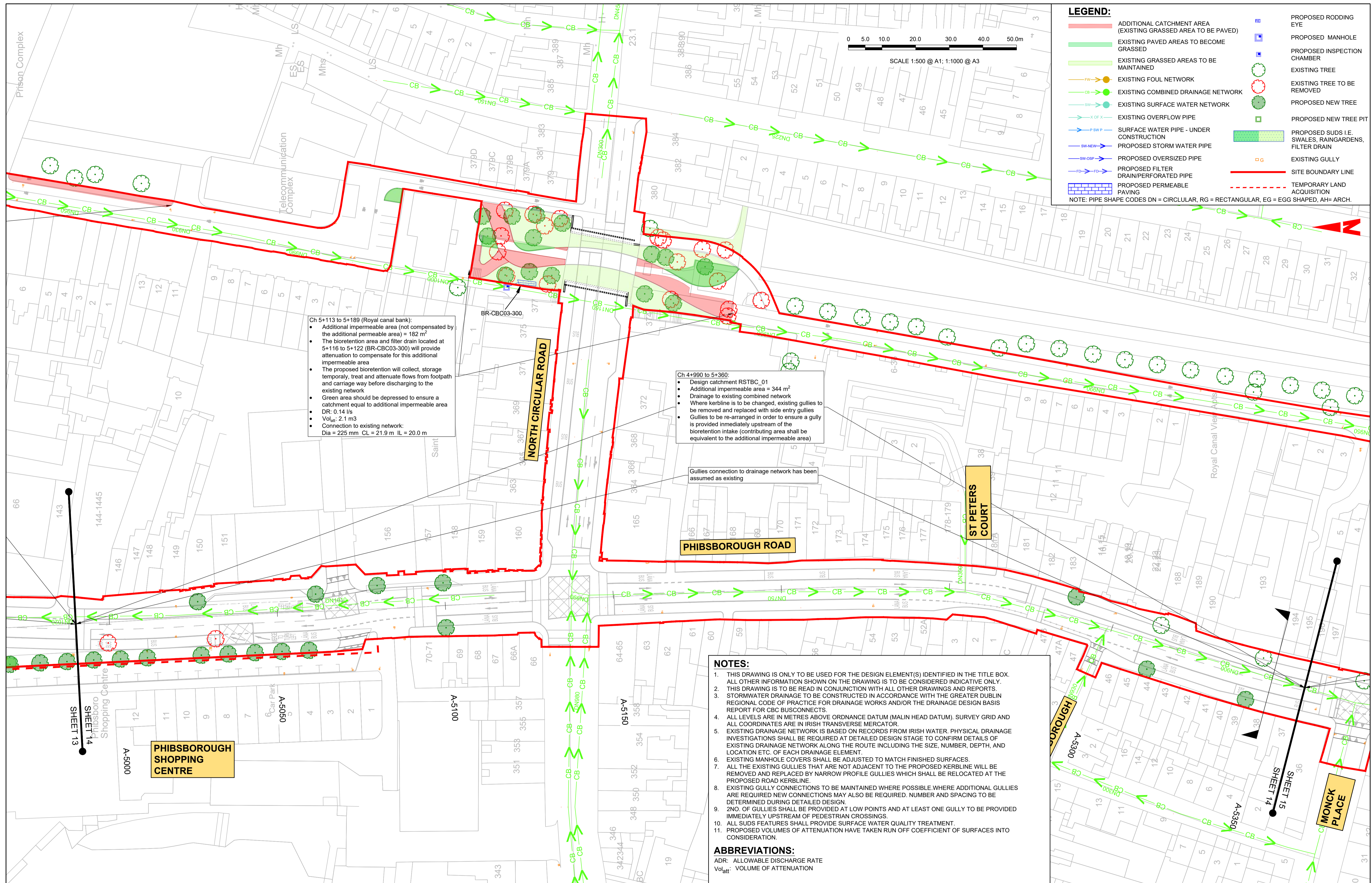
**Status:** A

**Rev:** M01

**NTA**  
Údaráis Náisiúnta Iompair  
National Transport Authority

**JROD**  
Infrastructure & Services  
TYPSA

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Ch 5+113 to 5+189 (Royal canal bank):

- Additional impermeable area (not compensated by the additional permeable area) = 182 m<sup>2</sup>
- The bioretention area and filter drain located at 5+116 to 5+122 (BR-CBC03-300) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- Green area should be depressed to ensure a catchment equal to additional impermeable area
- DR: 0.14 l/s
- Vol<sub>att</sub>: 2.1 m<sup>3</sup>
- Connection to existing network:
- Dia = 225 mm CL = 21.9 m IL = 20.0 m

Ch 4+990 to 5+360:

- Design catchment RSTBC\_01
- Additional impermeable area = 344 m<sup>2</sup>
- Drainage to existing combined network
- Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies
- Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)

Gullies connection to drainage network has been assumed as existing

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**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
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**Project Ireland 2040**  
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Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **JROD**  
 TYPSA

Date: 13/05/2022  
 Scale: 1:500 @ A1  
 1:1000 @ A3

Project Code: BCIDD  
 Originator Code: ROT

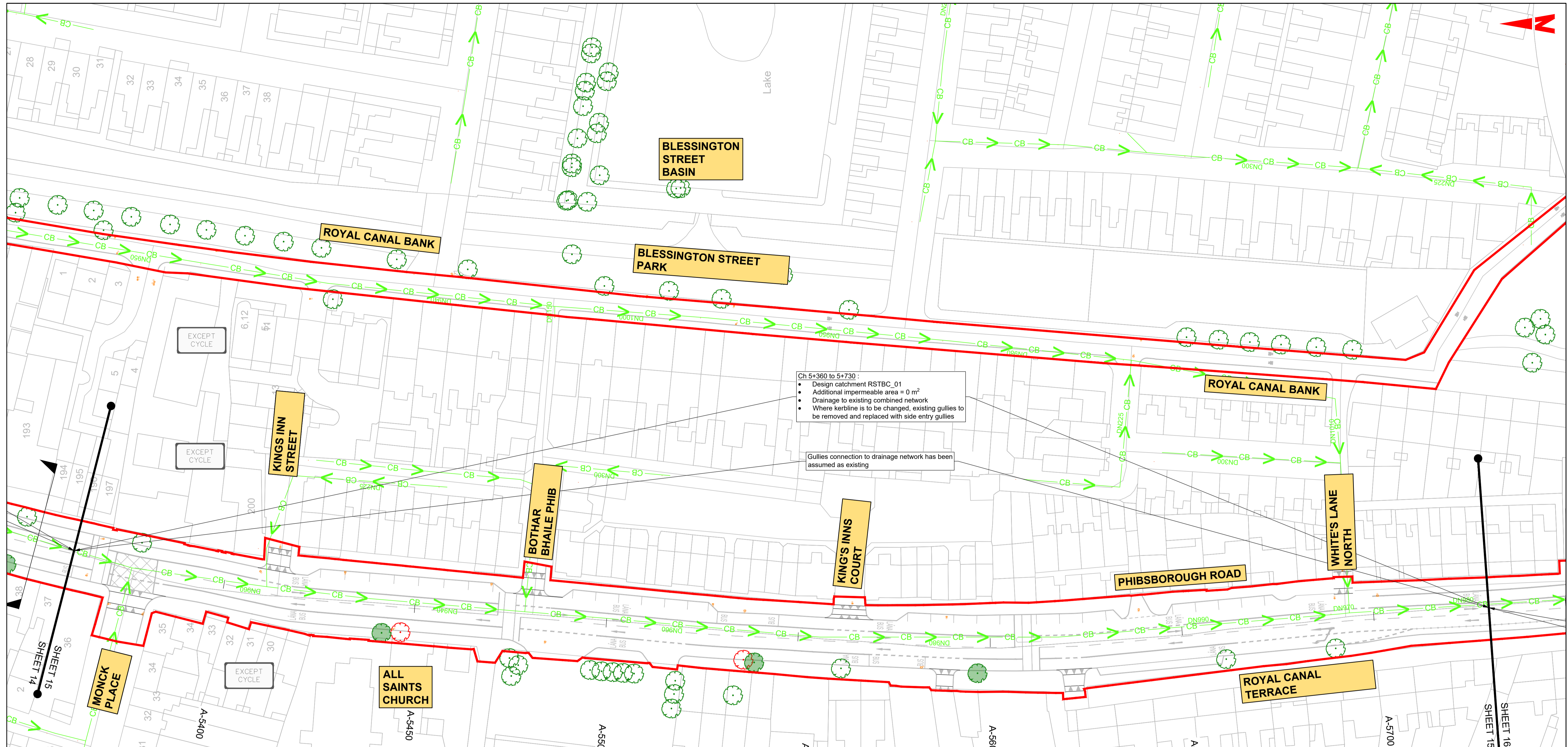
Drawn: ECD  
 Checked: EFD  
 Approved: SMG

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

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

Drawing File Name: BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0014  
 Sheet Number: 14 of 38  
 Status: A  
 Rev: M01

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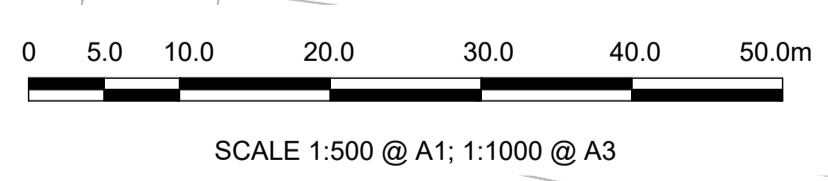
Ch 5+360 to 5+730 :  
 • Design catchment RSTBC\_01  
 • Additional impermeable area = 0 m<sup>2</sup>  
 • Drainage to existing combined network  
 • Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies

Gullies connection to drainage network has been assumed as existing

**LEGEND:**

ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)	PROPOSED RODDING EYE
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EXISTING COMBINED DRAINAGE NETWORK	EXISTING TREE TO BE REMOVED
EXISTING SURFACE WATER NETWORK	PROPOSED NEW TREE
EXISTING OVERFLOW PIPE	PROPOSED NEW TREE PIT
SURFACE WATER PIPE - UNDER CONSTRUCTION	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
PROPOSED STORM WATER PIPE	EXISTING GULLY
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M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

Client

Engineering Designer

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

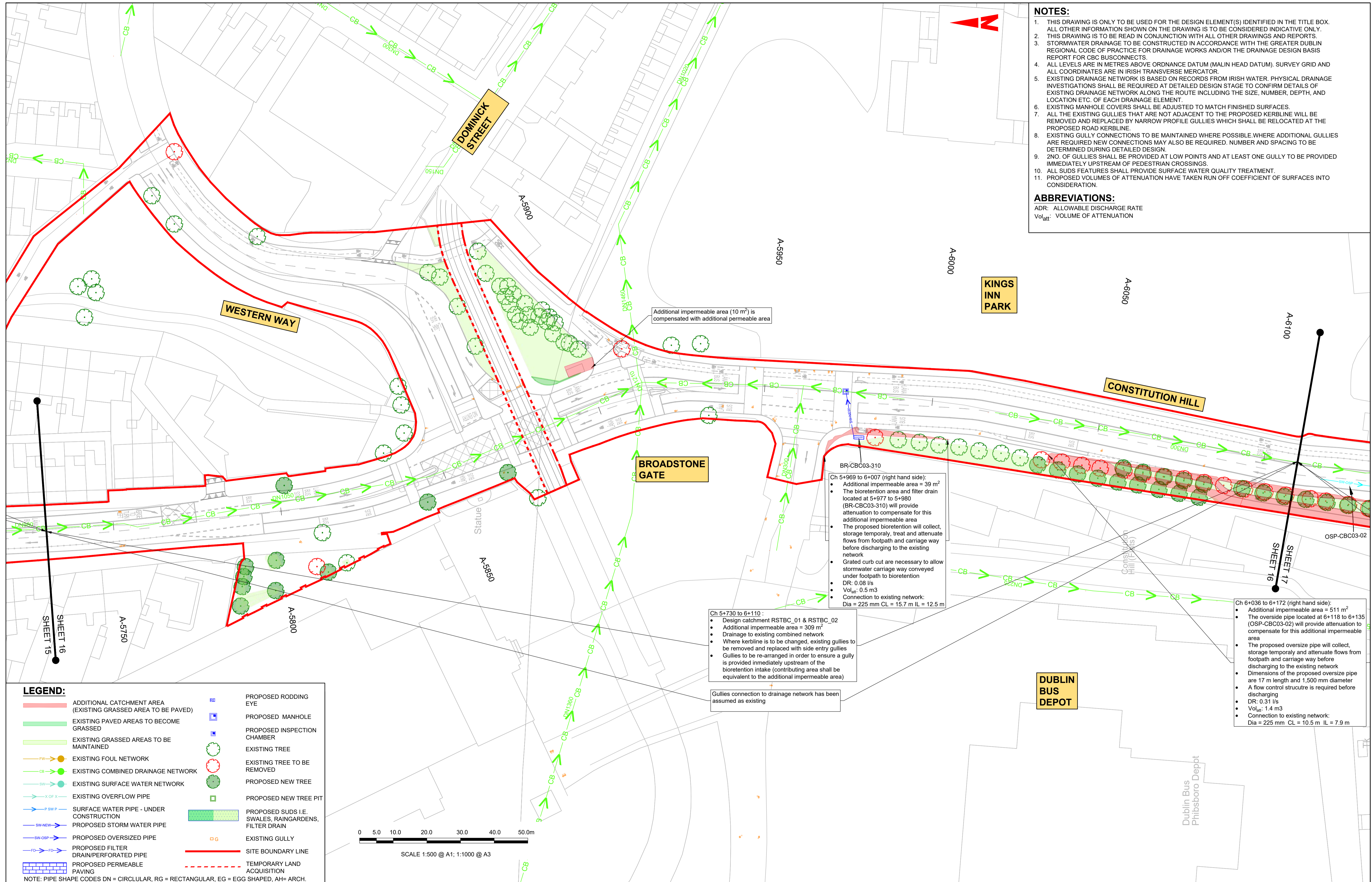
Drawing Title  
BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME  
PROPOSED SURFACE WATER DRAINAGE WORKS

Drawing File Name  
BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0015

Sheet Number  
15 of 38

Status  
A

Rev  
M01

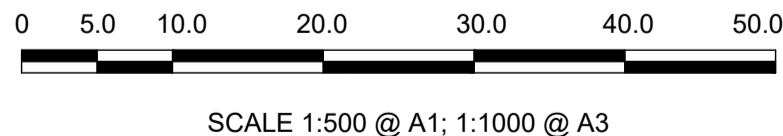


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Client: **NTA**  
 Údarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer: **IJROD**  
 TYPSA

Date: 13/05/2022  
 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDD  
 Originator Code: ROT

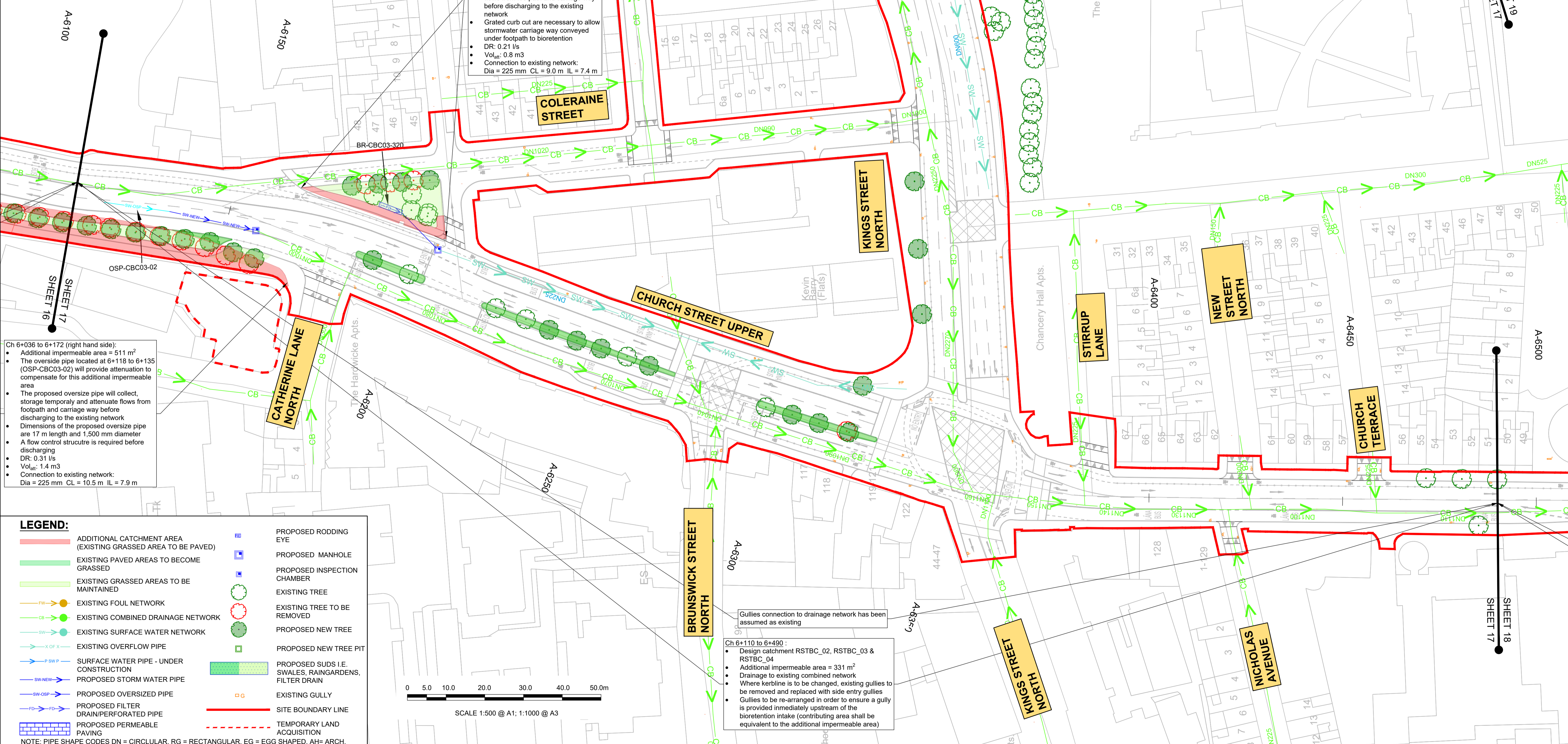
Drawn: ECD  
 Checked: EFD  
 Approved: SMG

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0016	Sheet Number: 16 of 38	Status: A	Rev: M01

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 Vol<sub>att</sub>: VOLUME OF ATTENUATION



Ch 6+165 to 6+205 (left hand side):

- Additional impermeable area = 80 m<sup>2</sup>
- The bioretention area and filter drain located at 6+174 to 6+181 (BR-CBC03-320) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, store temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- Grated curb cut are necessary to allow stormwater carriage way conveyed under footpath to bioretention
- DR: 0.21 l/s
- Vol<sub>att</sub>: 0.8 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 9.0 m IL = 7.4 m

Ch 6+036 to 6+172 (right hand side):

- Additional impermeable area = 511 m<sup>2</sup>
- The oversize pipe located at 6+118 to 6+135 (OSP-CBC03-02) will provide attenuation to compensate for this additional impermeable area
- The proposed oversize pipe will collect, store temporarily and attenuate flows from footpath and carriage way before discharging to the existing network
- Dimensions of the proposed oversize pipe are 17 m length and 1,500 mm diameter
- A flow control structure is required before discharging
- DR: 0.31 l/s
- Vol<sub>att</sub>: 1.4 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 10.5 m IL = 7.9 m

**LEGEND:**

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

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

<p><b>Project Ireland 2040</b> Building Ireland's Future</p>	<p>Rev M01 Date 13/05/2022 Dm ECD Chk'd EFD App'd SMG Description ISSUE FOR PHASE 4: PLANNING</p>	<p>Client <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority</p>	<p>Engineering Designer <b>IJROD</b> RESPONSIBLE &amp; CONTROLLED TYPSA</p>			<p>Programme Title <b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b></p>			
			<p>Date 13/05/2022 Scale 1:500 @ A1 1:1000 @ A3 Drawn ECD Checked EFD Approved SMG</p>			<p>Drawing Title <b>BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME</b> PROPOSED SURFACE WATER DRAINAGE WORKS</p>			
<p>Project Code BCIDD Originator Code ROT</p>		<p>QMS Code</p>		<p>Drawing File Name BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0017</p>		<p>Sheet Number 17 of 38</p>		<p>Status A Rev M01</p>	

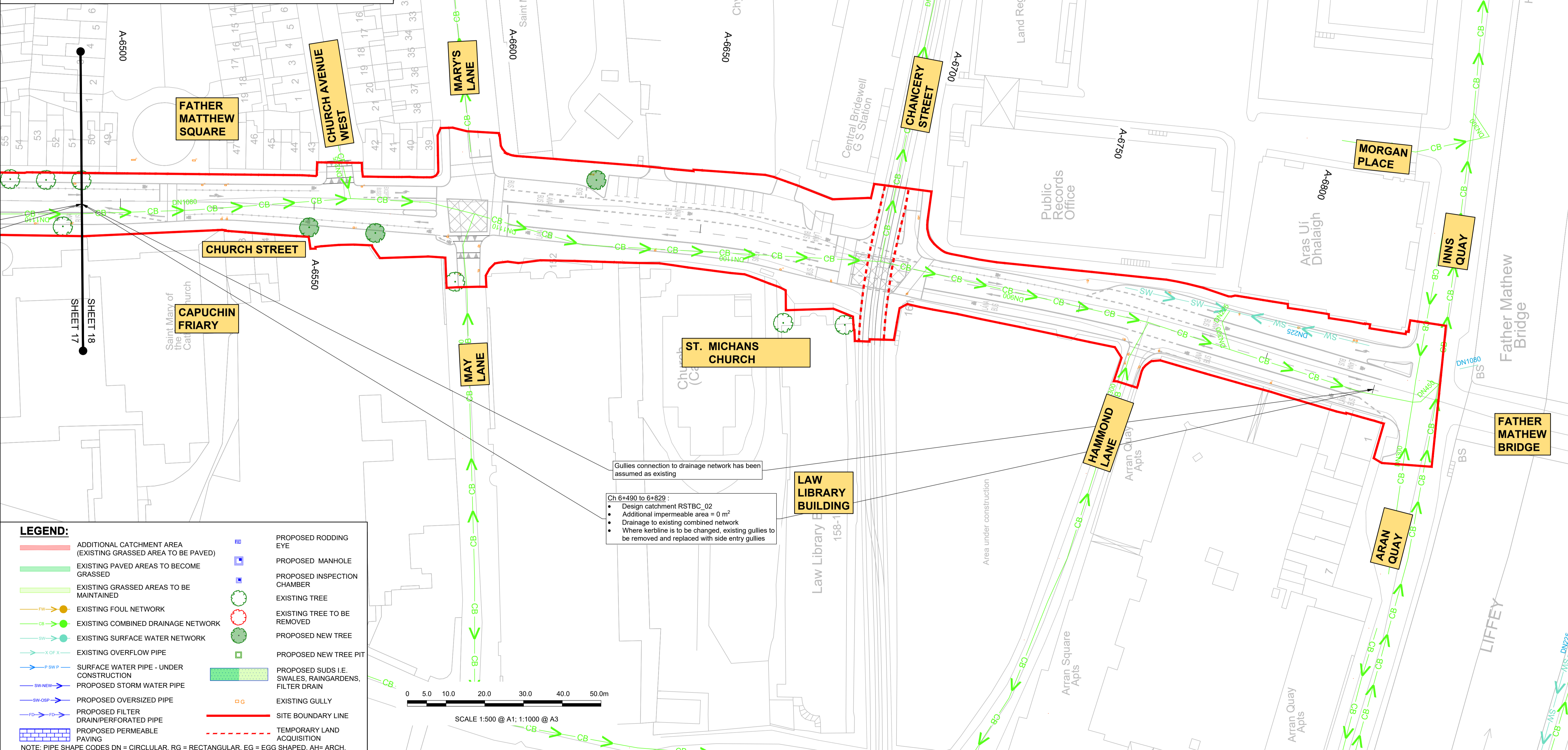
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3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). 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<sub>att</sub>: 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 DRAINAGE NETWORK	EXISTING TREE TO BE REMOVED
EXISTING SURFACE WATER NETWORK	PROPOSED NEW TREE
EXISTING OVERFLOW PIPE	PROPOSED NEW TREE PIT
SURFACE WATER PIPE - UNDER CONSTRUCTION	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
PROPOSED STORM WATER PIPE	EXISTING GULLY
PROPOSED OVERSIZED PIPE	SITE BOUNDARY LINE
PROPOSED FILTER DRAIN/PERFORATED PIPE	TEMPORARY LAND ACQUISITION
PROPOSED PERMEABLE PAVING	

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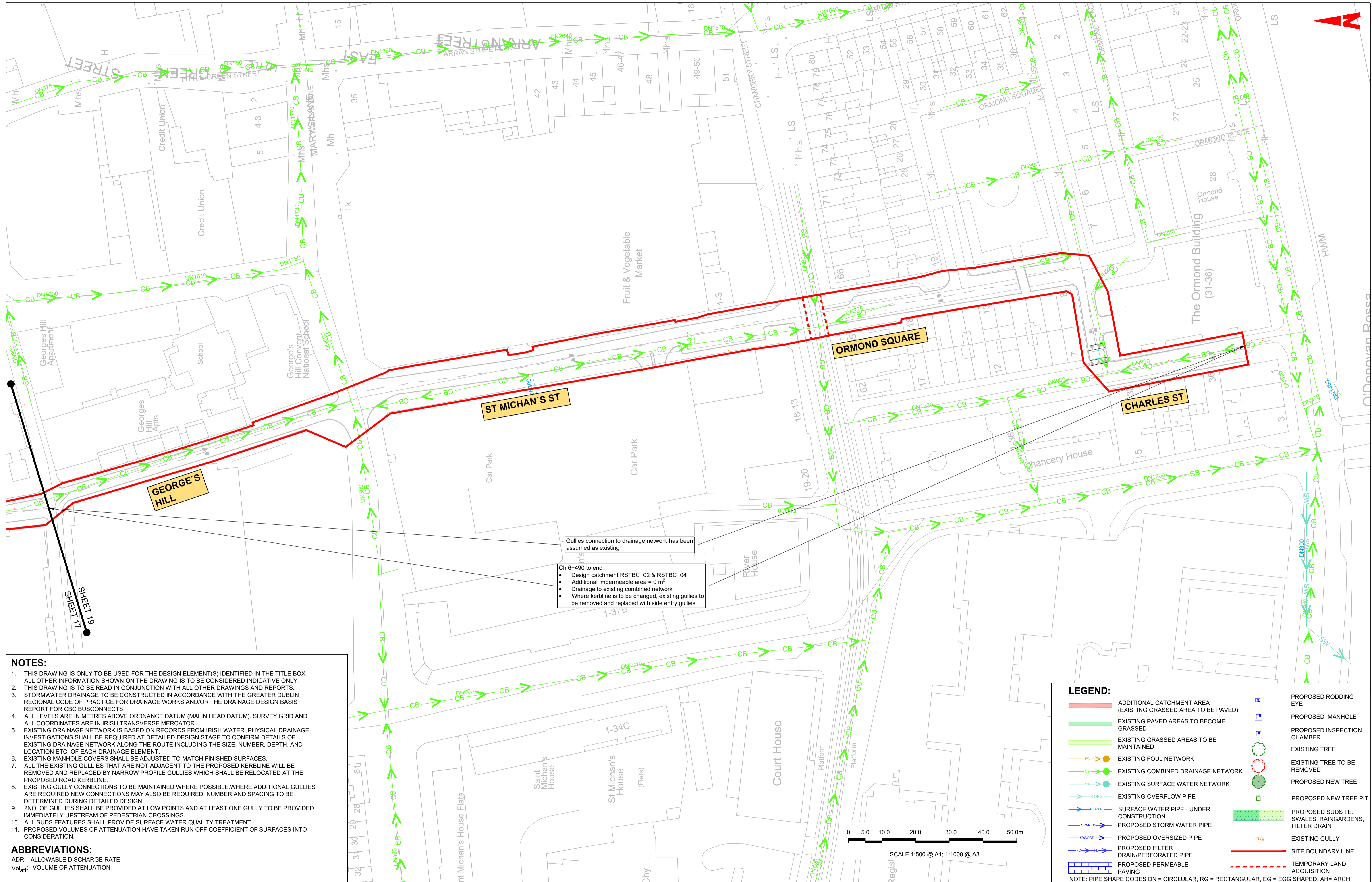
Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

 Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer  TYPSA		
Date	Scale	Drawn	Checked	Approved
13/05/2022	1:500 @ A1 1:1000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCDD	ROT			

Programme Title <b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title BALLYMUN / FINGLAS TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0018	18 of 38	A	M01

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Gullies connection to drainage network has been assumed as existing

Ch 6+490 to end :  
 • Design catchment RSTBC\_02 & RSTBC\_04  
 • Additional impermeable area = 0 m<sup>2</sup>  
 • Drainage to existing combined network  
 • Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies

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

**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: 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 DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **JROD**  
 TYPSA

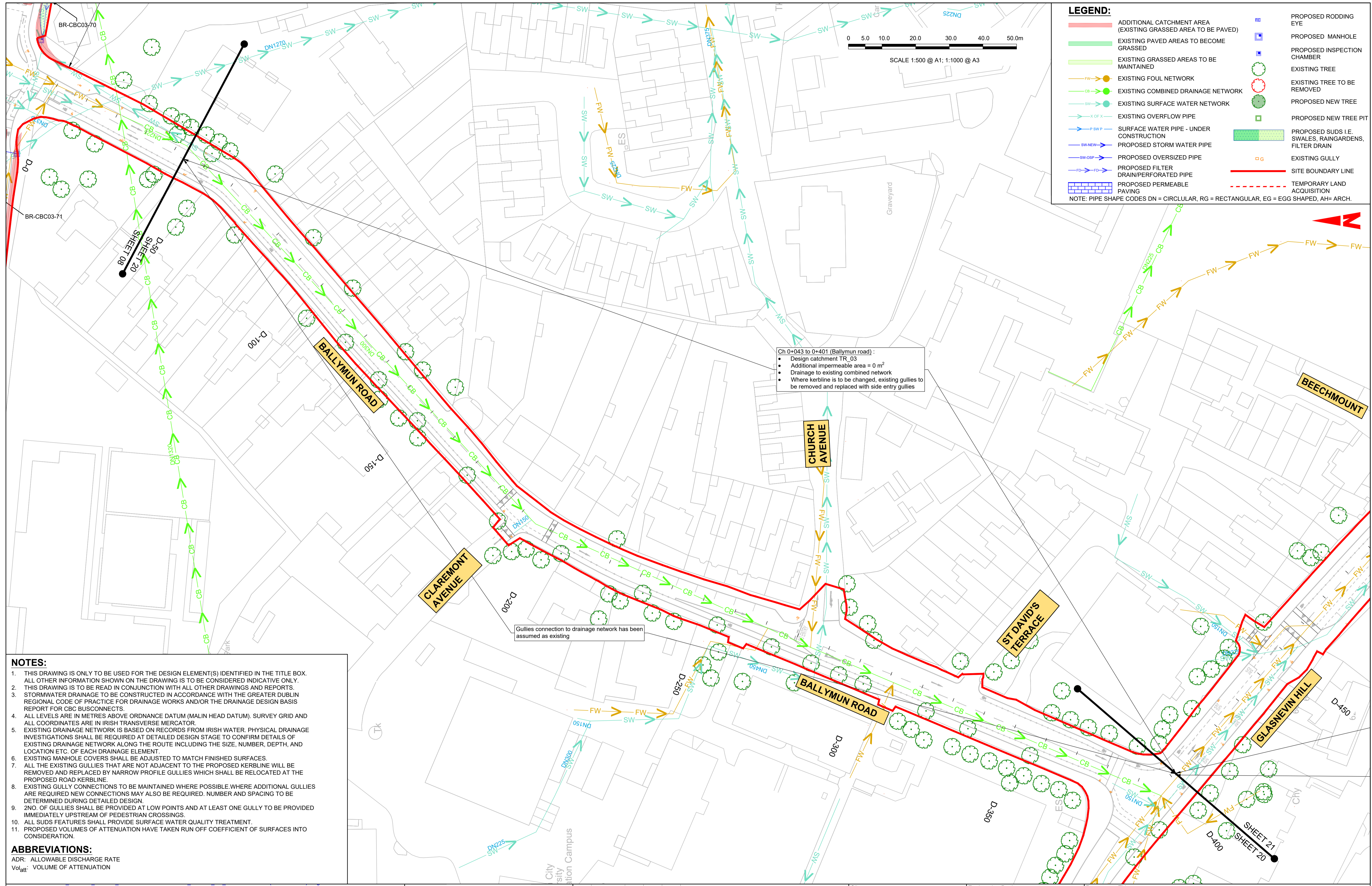
Date	Scale	Drawn	Checked	Approved
13/05/2022	1:500 @ A1 1:1000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCDD	ROT			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDD-ROT-DNG_RD-0304_XX_00-DR-CD-0019	19 of 38	A	M01

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**LEGEND:**

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

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Ch 0+043 to 0+401 (Ballymun road):

- Design catchment TR\_03
- Additional impermeable area = 0 m<sup>2</sup>
- Drainage to existing combined network
- Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies

Gullies connection to drainage network has been assumed as existing

- NOTES:**
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**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: VOLUME OF ATTENUATION

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**Project Ireland 2040**  
 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

**Engineering Designer:** JROD  
 TYPSA

Date: 13/05/2022  
 Scale: 1:500 @ A1, 1:1000 @ A3  
 Project Code: BCDD  
 Originator Code: ROT

Drawn: ECD  
 Checked: EFD  
 Approved: SMG

QMS Code

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

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

Drawing File Name: BCIDD-ROT-DNG\_RD-0304\_XX\_00-DR-CD-0020  
 Sheet Number: 20 of 38  
 Status: A  
 Rev: M01

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**ABBREVIATIONS:**  
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 Vol<sub>att</sub>: VOLUME OF ATTENUATION

Ch 0+043 to 0+401 (Ballymun road):

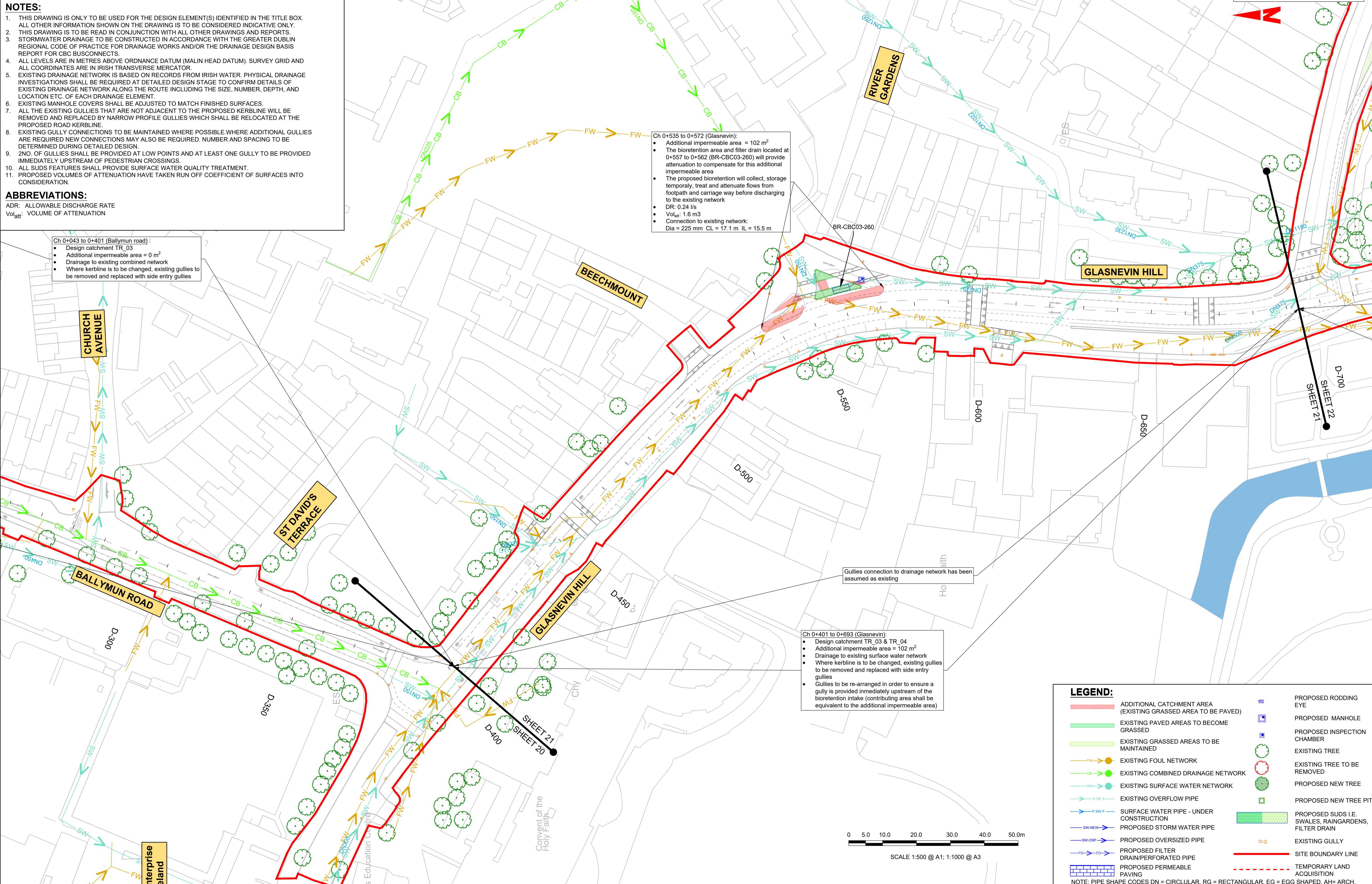
- Design catchment TR\_03
- Additional impermeable area = 0 m<sup>2</sup>
- Drainage to existing combined network
- Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies

Ch 0+535 to 0+572 (Glasnevin):

- Additional impermeable area = 102 m<sup>2</sup>
- The bioretention area and filter drain located at 0+557 to 0+562 (BR-CBC03-260) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.24 l/s
- Vol<sub>att</sub>: 1.6 m<sup>3</sup>
- Connection to existing network:  
Dia = 225 mm CL = 17.1 m IL = 15.5 m

Ch 0+401 to 0+693 (Glasnevin):

- Design catchment TR\_03 & TR\_04
- Additional impermeable area = 102 m<sup>2</sup>
- Drainage to existing surface water network
- Where kerbline is to be changed, existing gullies to be removed and replaced with side entry gullies
- Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)



**LEGEND:**

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
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**Project Ireland 2040**  
 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	13/05/2022	ECD	EFD	SMG	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **IROD**  
 TYPSA

Date	Scale	Drawn	Checked	Approved
13/05/2022	1:500 @ A1 1:1000 @ A3	ECD	EFD	SMG
Project Code	Originator Code	QMS Code		
BCDD	ROT			

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

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

Drawing File Name	Sheet Number	Status	Rev
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**LEGEND:**

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED DRAINAGE NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- SURFACE WATER PIPE - UNDER CONSTRUCTION
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
- NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.
- 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

Ch 3+460 to 3+850 :

- Design catchment TR\_01 & TR\_06
- Additional impermeable area = 877 m<sup>2</sup>
- Drainage to existing surface water and combined network
- Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies
- Gullies to be re-arranged in order to ensure a gully is provided immediately upstream of the bioretention intake (contributing area shall be equivalent to the additional impermeable area)

**SPORTS CLUB**

Ch 3+724 to 3+783 (right hand side):

- Additional impermeable area = 131 m<sup>2</sup>
- The bioretention area and filter drain located at 3+758 to 3+800 (BR-CBC03-201) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.38 l/s
- Vol<sub>att</sub>: 1.5 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 10.1 m IL = 8.0 m

Ch 3+843 to 3+900 (left hand side):

- Additional impermeable area = 50 m<sup>2</sup>
- The bioretention area and filter drain located at 3+888 to 3+895 (BR-CBC03-230) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.08 l/s
- Vol<sub>att</sub>: 0.6 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = N/A IL = N/A

Ch 3+906 to 3+961 (left hand side):

- Additional impermeable area = 48 m<sup>2</sup>
- The bioretention area and filter drain located at 3+951 to 3+961 (BR-CBC03-220) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.12 l/s
- Vol<sub>att</sub>: 0.6 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 13.6 m IL = N/A

Ch 3+968 to 3+993 (left hand side):

- Additional impermeable area = 21 m<sup>2</sup>
- The bioretention area and filter drain located at 3+972 to 3+978 (BR-CBC03-210) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.07 l/s
- Vol<sub>att</sub>: 0.4 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 13.8 m IL = 12.1 m

Ch 3+825 to 3+898 (left hand side):

- Additional impermeable area = 58 m<sup>2</sup>
- The bioretention area and filter drain located at 3+862 to 3+871 (BR-CBC03-250) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.17 l/s
- Vol<sub>att</sub>: 0.7 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 10.9 m IL = 9.5 m

Ch 3+903 to 3+962 (left hand side):

- Additional impermeable area = 40 m<sup>2</sup>
- The bioretention area and filter drain located at 3+910 to 3+916 (BR-CBC03-240) will provide attenuation to compensate for this additional impermeable area
- The proposed bioretention will collect, storage temporarily, treat and attenuate flows from footpath and carriage way before discharging to the existing network
- DR: 0.11 l/s
- Vol<sub>att</sub>: 0.5 m<sup>3</sup>
- Connection to existing network: Dia = 225 mm CL = 12.2 m IL = 10.8 m

Ch 0+693 to 0+924 (Botanic road):

- Design catchment TR\_03, TR\_04, TR\_05 & TR\_06
- Additional impermeable area = 0 m<sup>2</sup>
- Drainage to existing surface water network
- Where kerblines is to be changed, existing gullies to be removed and replaced with side entry gullies

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

**ABBREVIATIONS:**

ADR: ALLOWABLE DISCHARGE RATE  
Vol<sub>att</sub>: VOLUME OF ATTENUATION

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National Transport Authority

Date: 13/05/2022  
Scale: 1:500 @ A1  
1:1000 @ A3

Project Code: BCIDD  
Originator Code: ROT

Engineering Designer: **IJROD**  
TYPSA

Drawn: ECD  
Checked: EFD  
Approved: SMG

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Sheet Number: 22 of 38  
Status: A  
Rev: M01

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