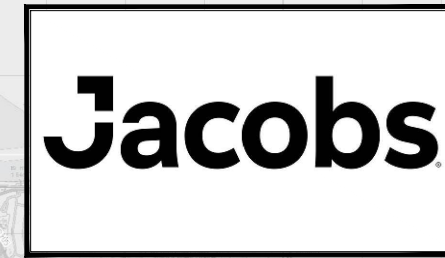


**Appendix IV**  
Proposed Surface Water  
Drainage Works



# BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS

## BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME

DRAWING SERIES NUMBER(S)	DRAWING SERIES DESCRIPTION
BCIDB-JAC-DNG_IX-0013_XX_00-DR-CD-0001	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME. PROPOSED SURFACE WATER DRAINAGE WORKS COVER SHEET
BCIDB-JAC-DNG_KP-0013_XX_00-DR-CD-0001	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME. PROPOSED SURFACE WATER DRAINAGE WORKS KEY PLAN
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001 to 1011	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME. DRAINAGE CATCHMENT AREAS
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001 to 0054	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME. PROPOSED SURFACE WATER DRAINAGE WORKS

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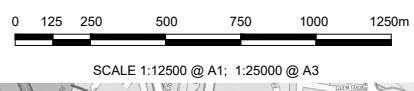
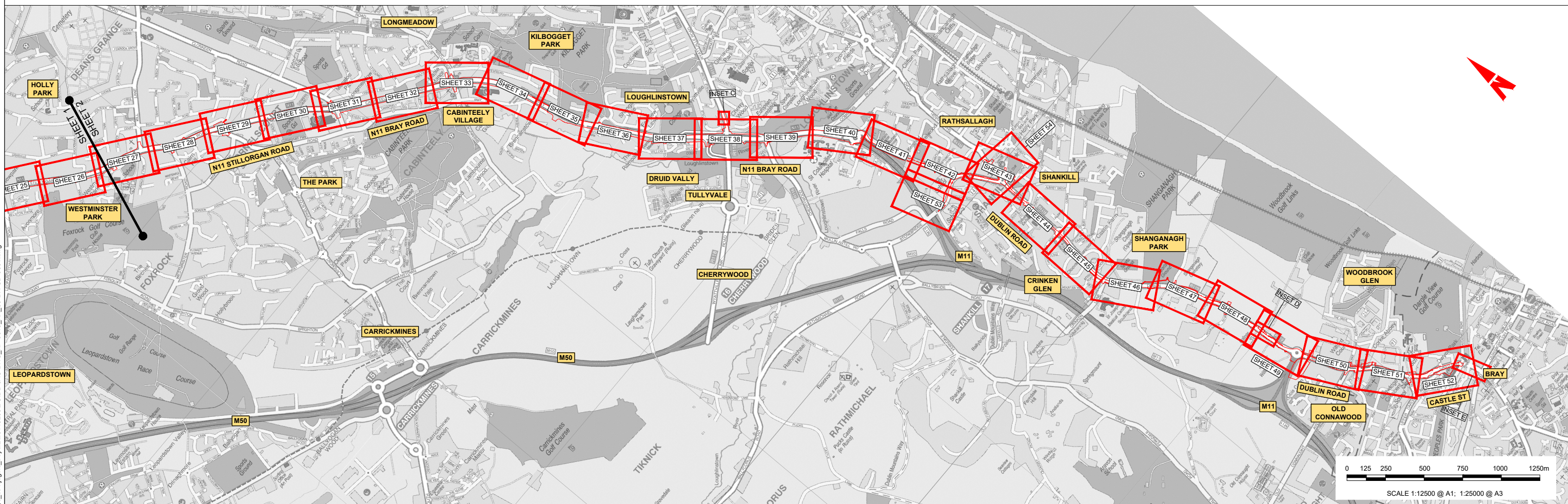
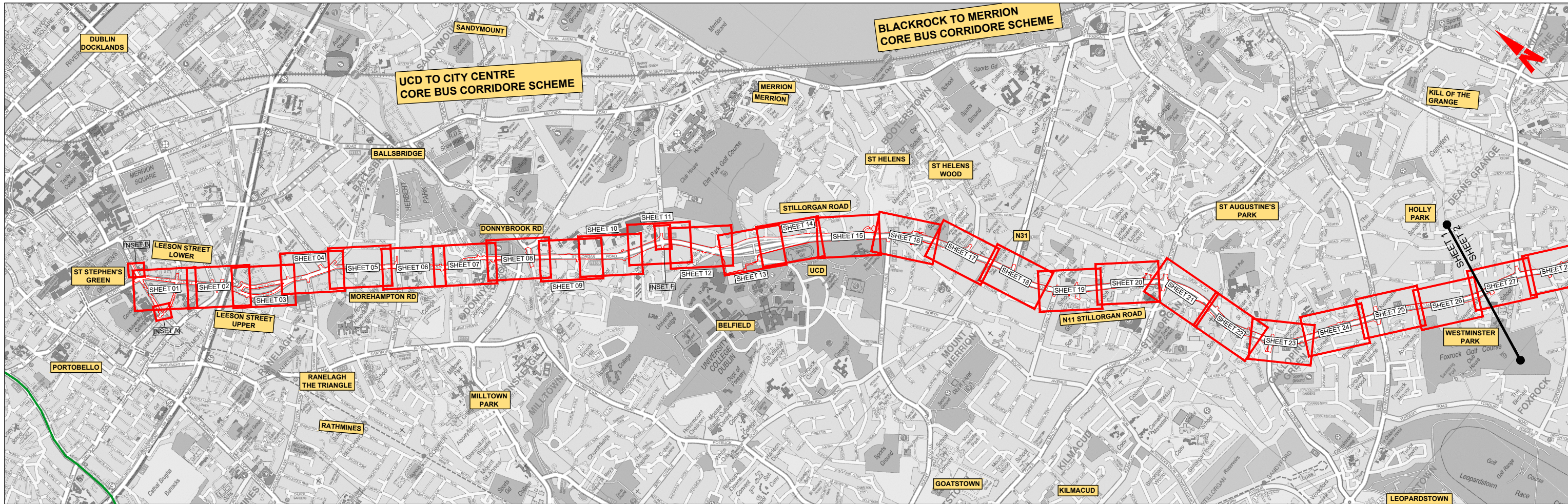


Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

Date	Scale	Drawn	Checked	Approved
08/05/2023	NTS @ A1 NTS @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

<b>Programme Title</b> <b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
<b>Drawing Title</b> BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS COVER SHEET			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_IX-0013_XX_00-DR-CD-0001	01 of 01	A	M01

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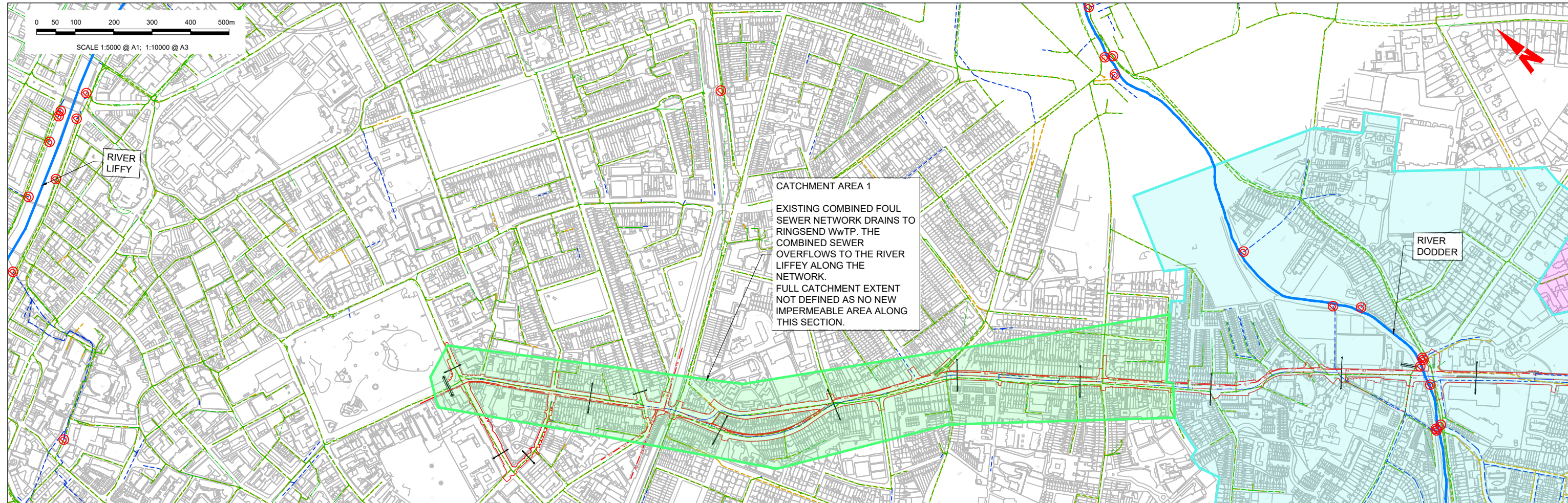
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Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

Client		Engineering Designer		Programme Title	
NTA Údarás Náisiúnta Iompair National Transport Authority		Jacobs		BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS	
Date	Scale	Drawn	Checked	Approved	Drawing Title
08/05/2023	1:12500 @ A1 1:25000 @ A3	BD	NS	RS	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS KEY PLAN
Project Code	Originator Code	OMS Code		Drawing File Name	Sheet Number
BCIDB	JAC			BCIDB-JAC-DNG_KP-0013_XX_00-DR-CD-0001	01 of 01
Status	Rev				
A	M01				

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Drawing File Name: BCIDB-JAC-DNG\_KP-0013\_XX\_00-DR-CD-0001  
 Sheet Number: 01 of 01  
 Status: A  
 Rev: M01



**CATCHMENT AREA 1**  
 EXISTING COMBINED FOUL SEWER NETWORK DRAINS TO RINGSEND WWTP. THE COMBINED SEWER OVERFLOWS TO THE RIVER LIFFEY ALONG THE NETWORK. FULL CATCHMENT EXTENT NOT DEFINED AS NO NEW IMPERMEABLE AREA ALONG THIS SECTION.

NO DRAINAGE NETWORK INFORMATION TO DEFINE CATCHMENT BOUNDARY. THE BOUNDARY IS BASED ON TOPOGRAPHIC INFORMATION ONLY AND SHOULD BE REGARDED AS INDICATIVE

**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
- DISCHARGE POINT
- 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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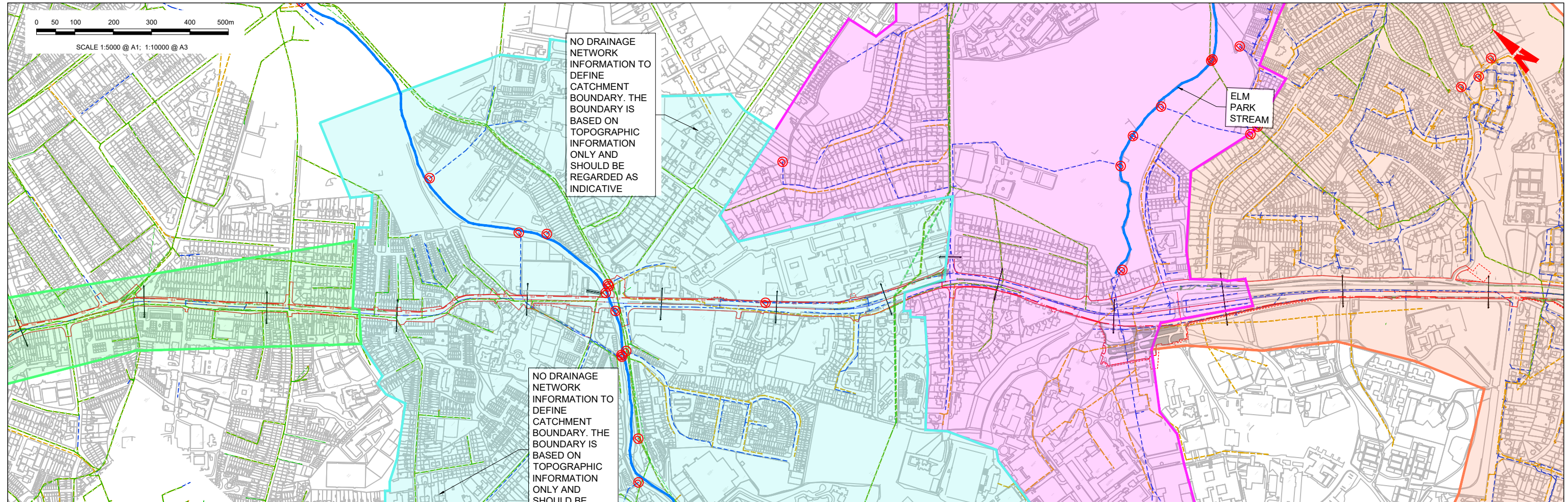


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M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

<b>Programme Title</b> <b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>	
<b>Drawing Title</b> BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS	
<b>Drawing File Name</b> BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001	<b>Sheet Number</b> 01 of 11
<b>Status</b> A	<b>Rev</b> M01

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CATCHMENT AREA 2  
295.90 HECTARES  
EXISTING STORMWATER NETWORK OUTFALLS TO THE RIVER DODDER

**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
- 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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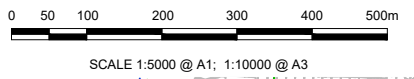
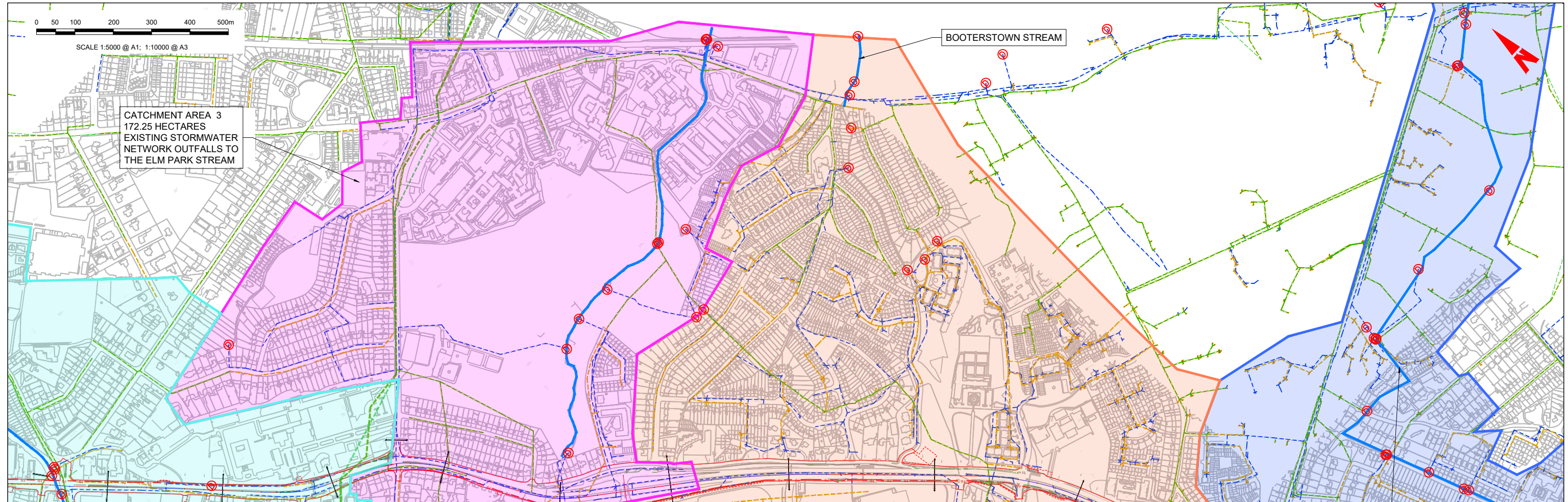
Client: **NTA**  
Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title	BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name	Sheet Number	Status	Rev	
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1002	02 of 11	A	M01	

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CATCHMENT AREA 3  
172.25 HECTARES  
EXISTING STORMWATER  
NETWORK OUTFALLS TO  
THE ELM PARK STREAM

BOOTERSTOWN STREAM

PRIORY STREAM

CATCHMENT AREA 4  
209.00 HECTARES  
EXISTING STORMWATER  
NETWORK OUTFALLS TO  
BOOTERSTOWN STREAM

NO DRAINAGE  
NETWORK  
INFORMATION TO  
DEFINE  
CATCHMENT  
BOUNDARY. THE  
BOUNDARY IS  
BASED ON  
TOPOGRAPHIC  
INFORMATION  
ONLY AND  
SHOULD BE  
REGARDED AS  
INDICATIVE

**LEGEND:**

	CATCHMENT AREA 1		CATCHMENT AREA 9
	CATCHMENT AREA 2		CATCHMENT AREA 10
	CATCHMENT AREA 3		CATCHMENT AREA 11
	CATCHMENT AREA 4		CATCHMENT AREA 12
	CATCHMENT AREA 5		CATCHMENT AREA 13
	CATCHMENT AREA 6		DISCHARGE POINT
	CATCHMENT AREA 7		
	CATCHMENT AREA 8		

	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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Client <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer <b>Jacobs</b>		
Date 08/05/2023	Scale 1:5000 @ A1 1:10000 @ A3	Drawn BD	Checked NS	Approved RS
Project Code BCIDB	Originator Code JAC	QMS Code		

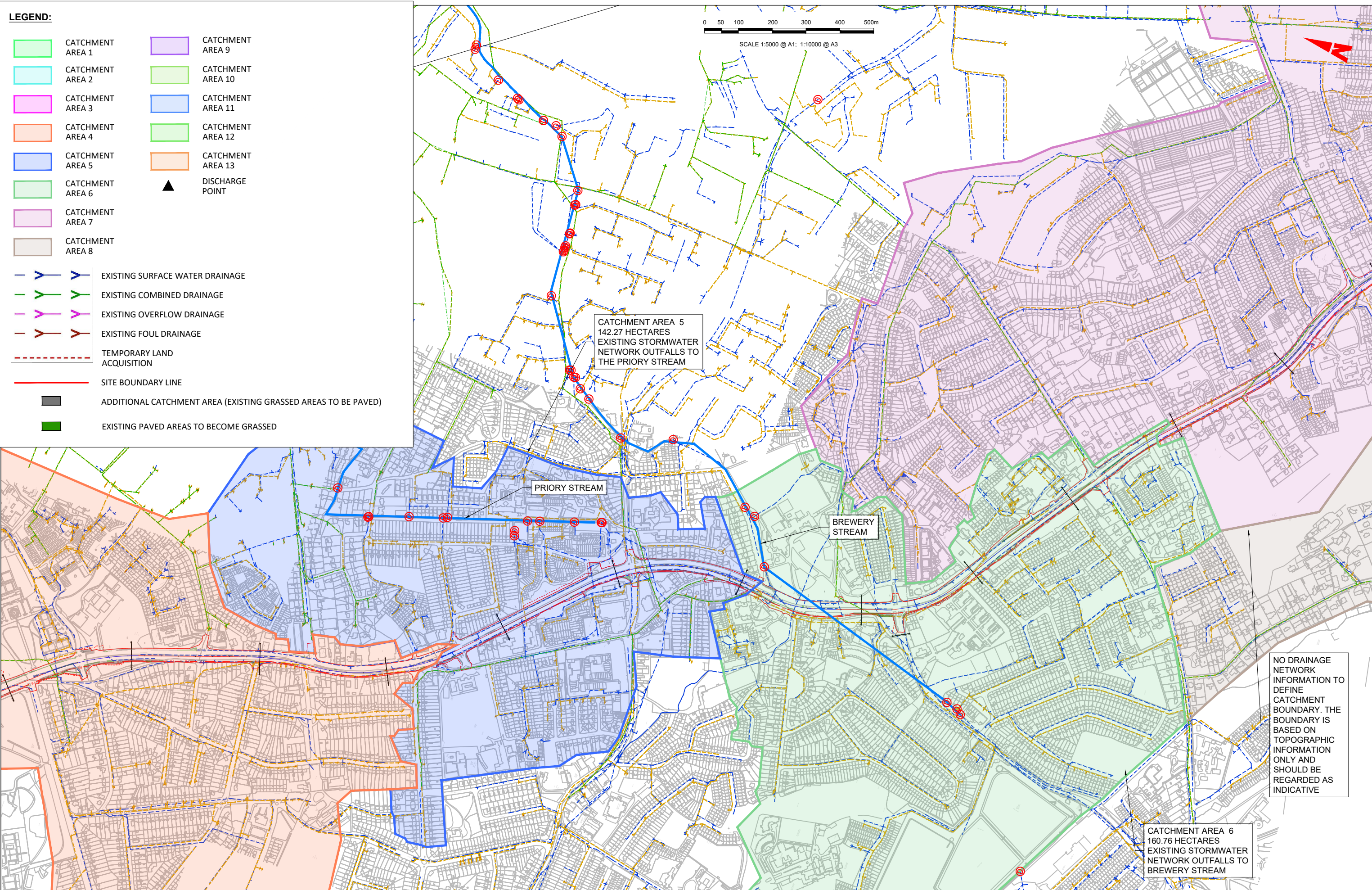
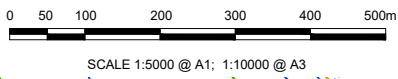
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Drawing Title BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS				
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1003	Sheet Number 03 of 11	Status A	Rev M01	

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**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
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- 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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 National Transport Authority

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Project Code	Originator Code	OMS Code		
BCIDB	JAC			

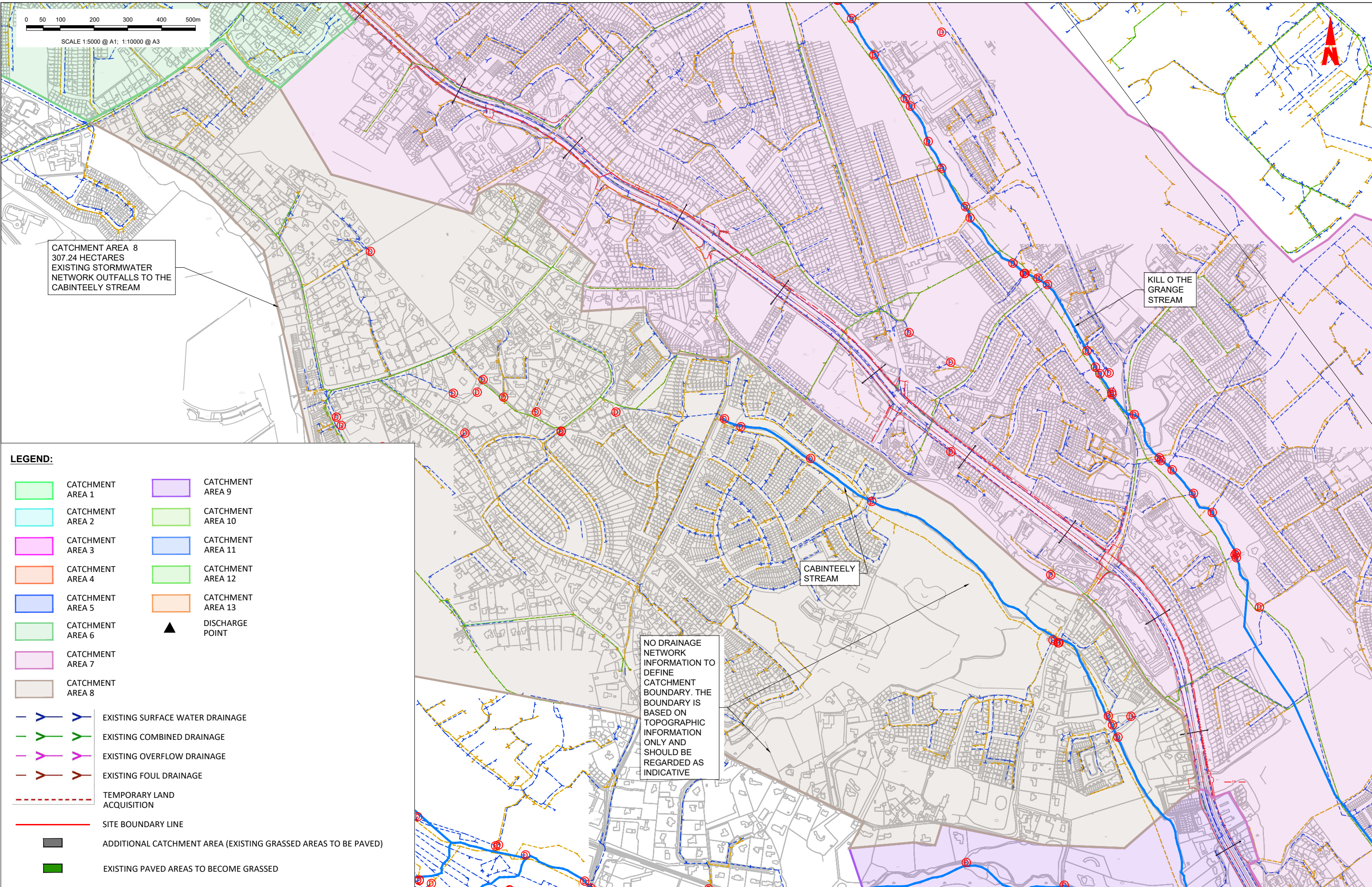
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1004	04 of 11	A	M01

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**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
- 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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Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023  
 Scale: 1:5000 @ A1, 1:10000 @ A3  
 Project Code: BCIDB  
 Originator Code: JAC

Drawn: BD  
 Checked: NS  
 Approved: RS

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1006	Sheet Number: 06 of 11	Status: A	Rev: M01

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

**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
- DISCHARGE POINT
- 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

CATCHMENT AREA 7  
816.59 HECTARES  
EXISTING STORMWATER  
NETWORK OUTFALLS TO THE  
KILL O THE GRANGE STREAM

KILL O THE  
GRANGE  
STREAM

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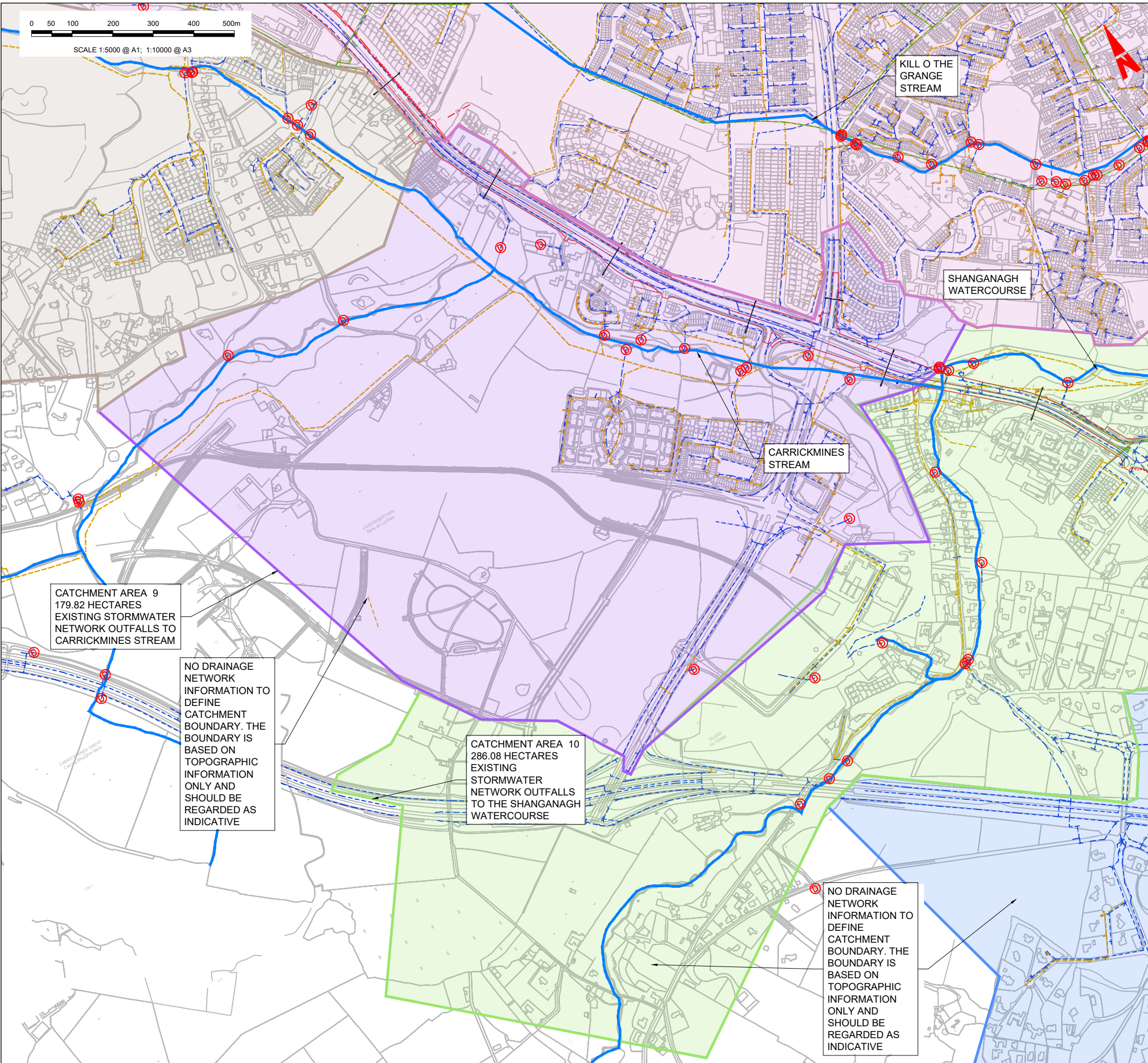
Client: **NTA** Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

Programme Title			
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1007	07 of 11	A	M01

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**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
- DISCHARGE POINT
- 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

CATCHMENT AREA 9  
179.82 HECTARES  
EXISTING STORMWATER  
NETWORK OUTFALLS TO  
CARRICKMINES STREAM

NO DRAINAGE  
NETWORK  
INFORMATION TO  
DEFINE  
CATCHMENT  
BOUNDARY. THE  
BOUNDARY IS  
BASED ON  
TOPOGRAPHIC  
INFORMATION  
ONLY AND  
SHOULD BE  
REGARDED AS  
INDICATIVE

CATCHMENT AREA 10  
286.08 HECTARES  
EXISTING  
STORMWATER  
NETWORK OUTFALLS  
TO THE SHANGANAGH  
WATERCOURSE

NO DRAINAGE  
NETWORK  
INFORMATION TO  
DEFINE  
CATCHMENT  
BOUNDARY. THE  
BOUNDARY IS  
BASED ON  
TOPOGRAPHIC  
INFORMATION  
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 Údarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title			
<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1008	08 of 11	A	M01

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

CATCHMENT AREA 13  
229.45 HECTARES  
EXISTING STORMWATER  
NETWORK OUTFALLS TO  
THE SEA

NO DRAINAGE  
NETWORK  
INFORMATION TO  
DEFINE  
CATCHMENT  
BOUNDARY. THE  
BOUNDARY IS  
BASED ON  
TOPOGRAPHIC  
INFORMATION  
ONLY AND  
SHOULD BE  
REGARDED AS  
INDICATIVE



**LEGEND:**

- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- CATCHMENT AREA 8
- CATCHMENT AREA 9
- CATCHMENT AREA 10
- CATCHMENT AREA 11
- CATCHMENT AREA 12
- CATCHMENT AREA 13
- DISCHARGE POINT
- 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

SHANGANAGH RIVER

RATHMICHAEL WATERCOURSE

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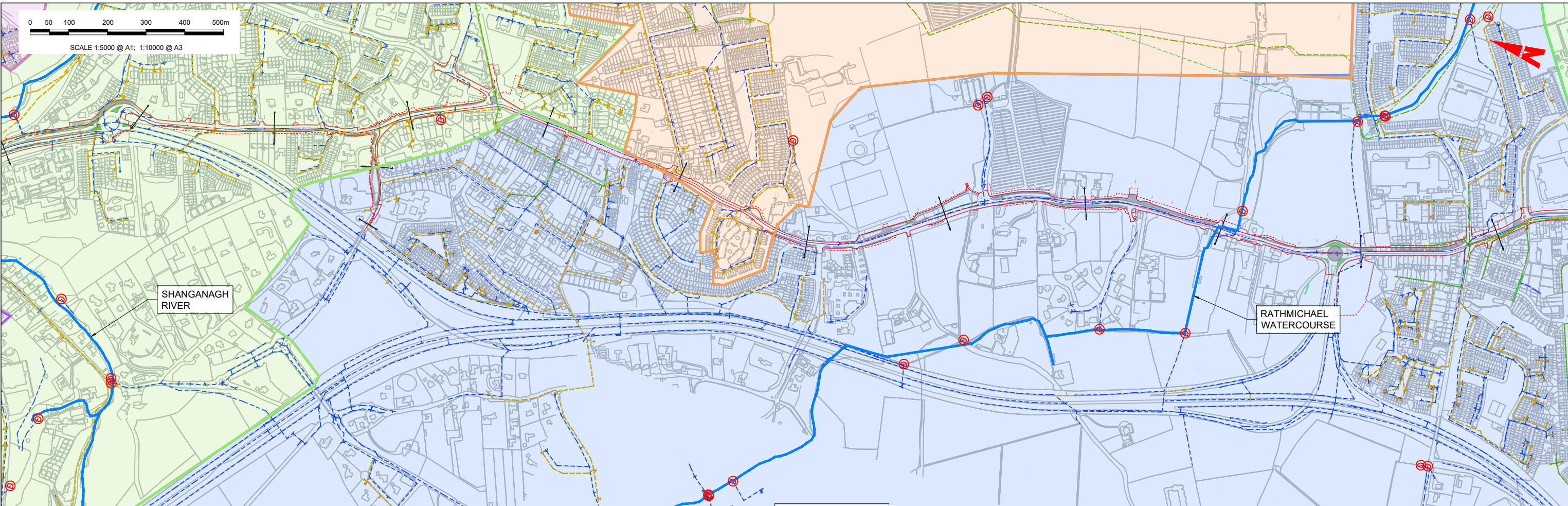
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		Engineering Designer		
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title			
BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title			
BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1009	09 of 11	A	M01

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**LEGEND:**

	CATCHMENT AREA 1		CATCHMENT AREA 9
	CATCHMENT AREA 2		CATCHMENT AREA 10
	CATCHMENT AREA 3		CATCHMENT AREA 11
	CATCHMENT AREA 4		CATCHMENT AREA 12
	CATCHMENT AREA 5		CATCHMENT AREA 13
	CATCHMENT AREA 6		DISCHARGE POINT
	CATCHMENT AREA 7		
	CATCHMENT AREA 8		

	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

CATCHMENT AREA 11  
585.51 HECTARES  
EXISTING  
STORMWATER  
NETWORK OUTFALLS  
TO THE RATHMICHAEL  
WATERCOURSE

NO DRAINAGE  
NETWORK  
INFORMATION TO  
DEFINE  
CATCHMENT  
BOUNDARY. THE  
BOUNDARY IS  
BASED ON  
TOPOGRAPHIC  
INFORMATION  
ONLY AND  
SHOULD BE  
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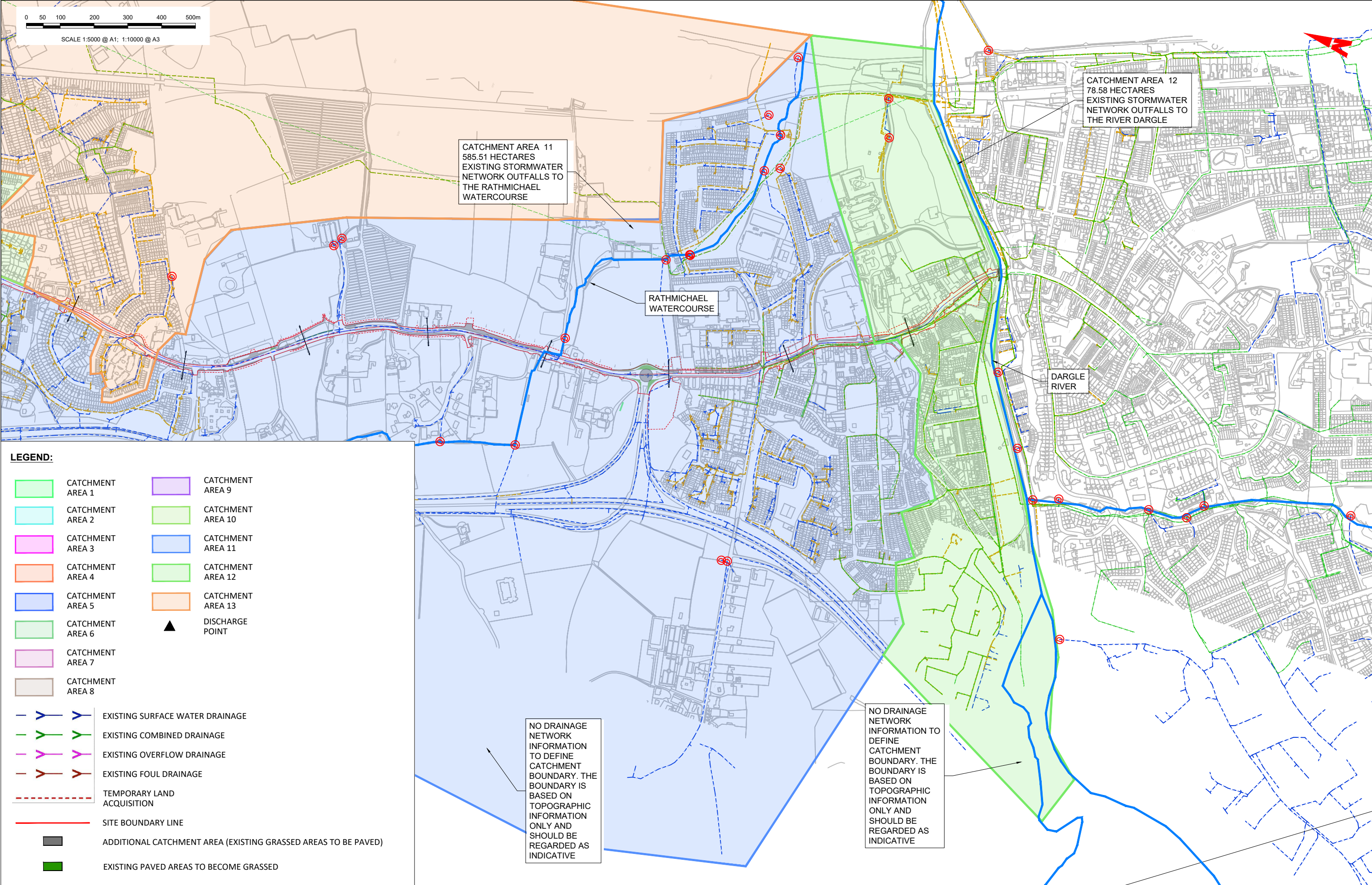
Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

 Údarás Náisiúnta Iompair National Transport Authority	Engineering Designer			
Date 08/05/2023	Scale 1:5000 @ A1 1:10000 @ A3	Drawn BD	Checked NS	Approved RS
Project Code BCIDB	Originator Code JAC	QMS Code		

Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1010	10 of 11	A	M01

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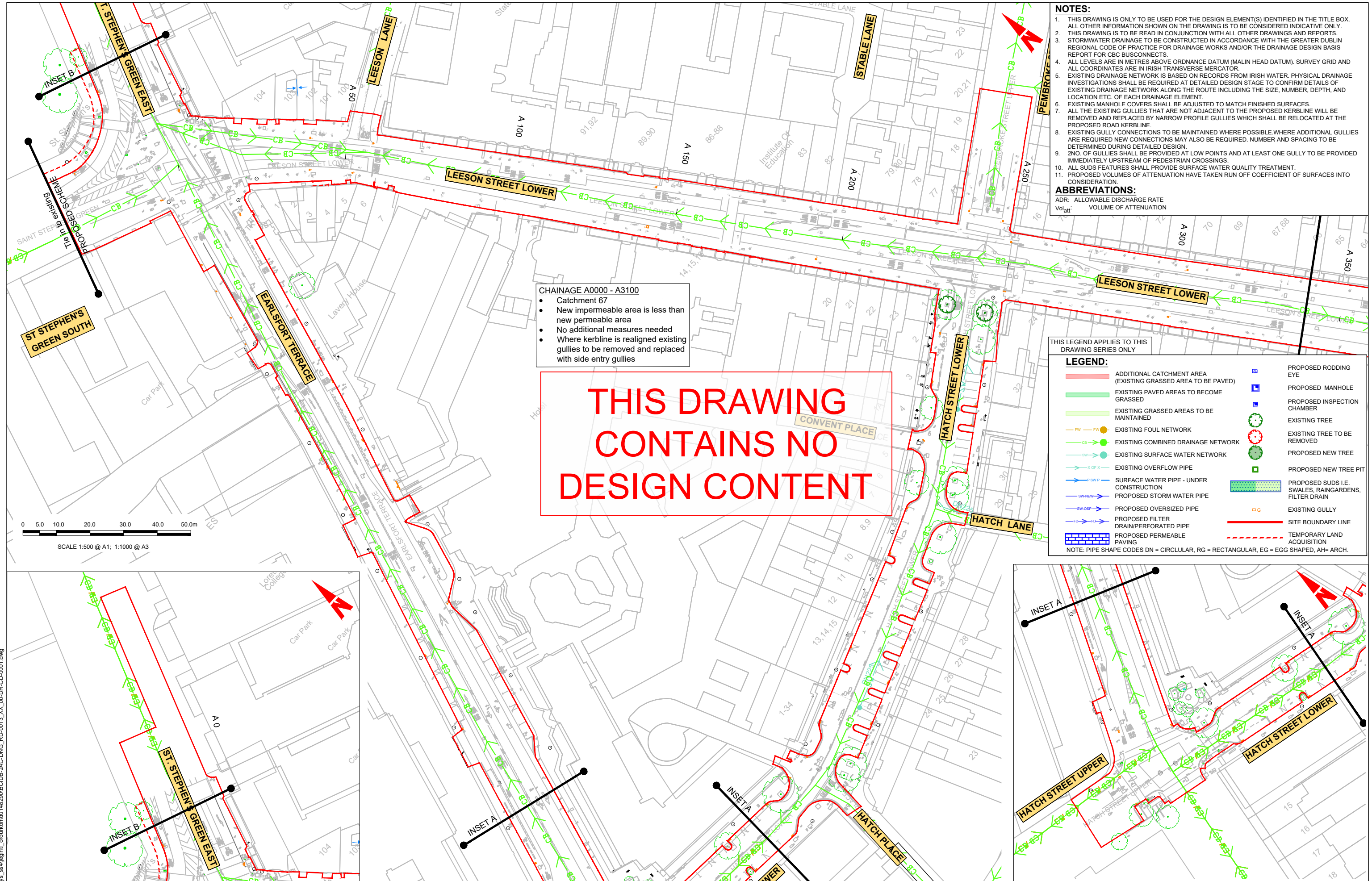
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Client		Engineering Designer		Programme Title	
NTA Údarás Náisiúnta Iompair National Transport Authority		Jacobs		BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS	
Date	Scale	Drawn	Checked	Approved	Draining Title
08/05/2023	1:5000 @ A1 1:10000 @ A3	BD	NS	RS	BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS
Project Code	Originator Code	QMS Code		Drawing File Name	Sheet Number
BCIDB	JAC			BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1011	11 of 11
				Status	Rev
				A	M01

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  - 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

**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**THIS DRAWING CONTAINS NO DESIGN CONTENT**

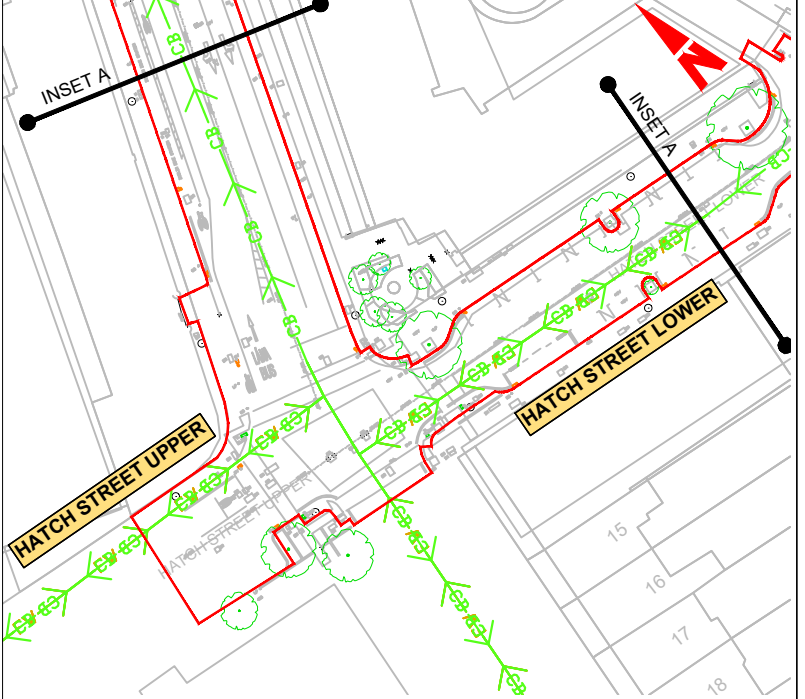
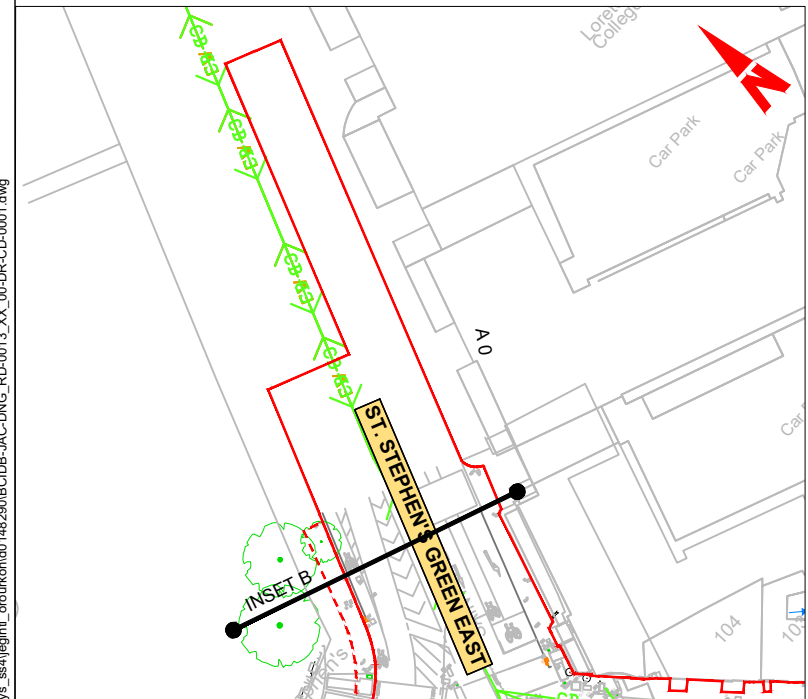
THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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.

0 5.0 10.0 20.0 30.0 40.0 50.0m  
 SCALE 1:500 @ A1; 1:1000 @ A3



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**Project Ireland 2040**  
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Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

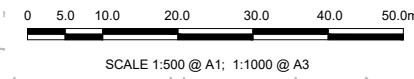
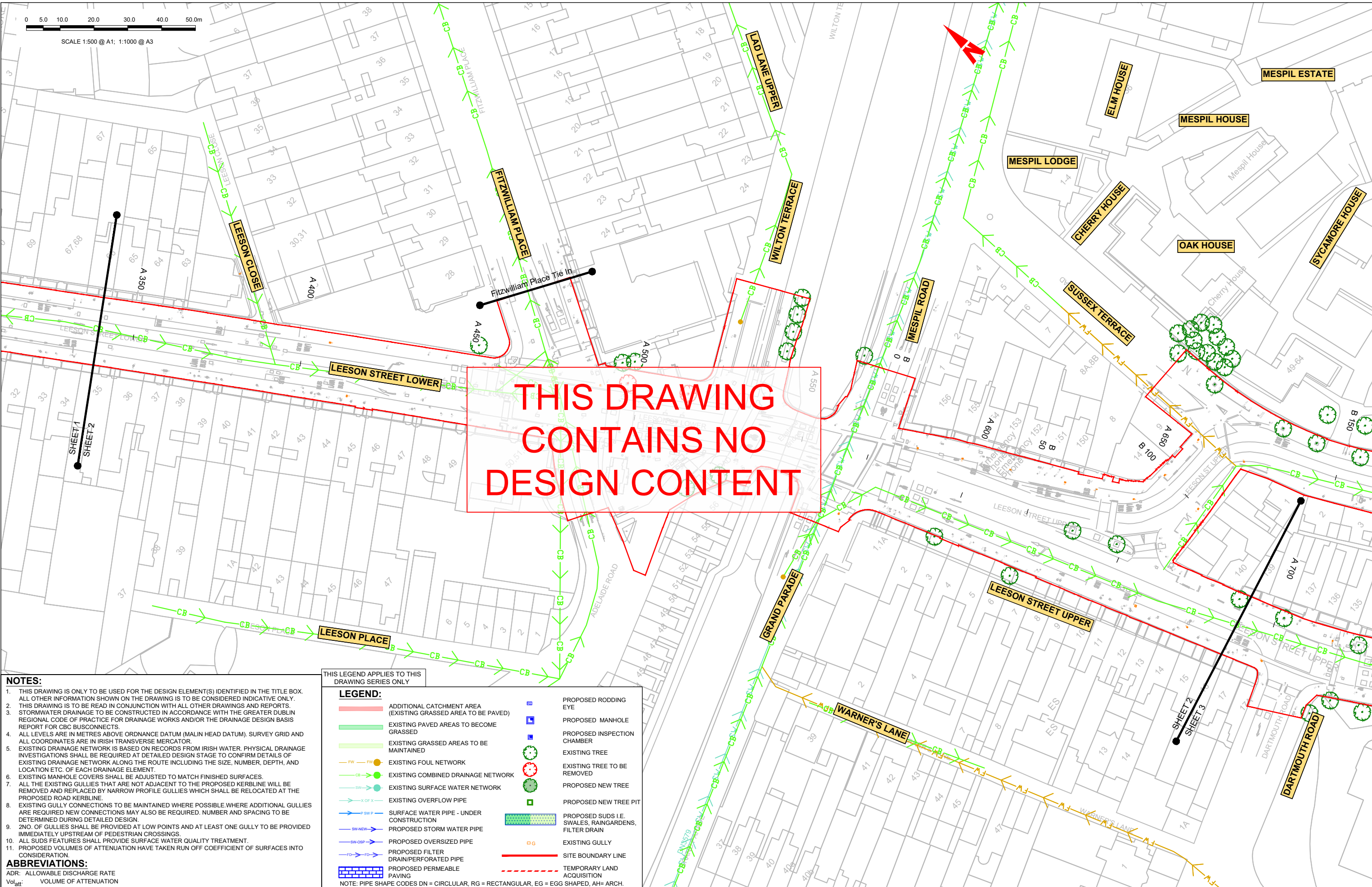
Client: **NTA**  
 Ódarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

Programme Title			
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001	01 of 54	A	M01

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**THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY**

**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.

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

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

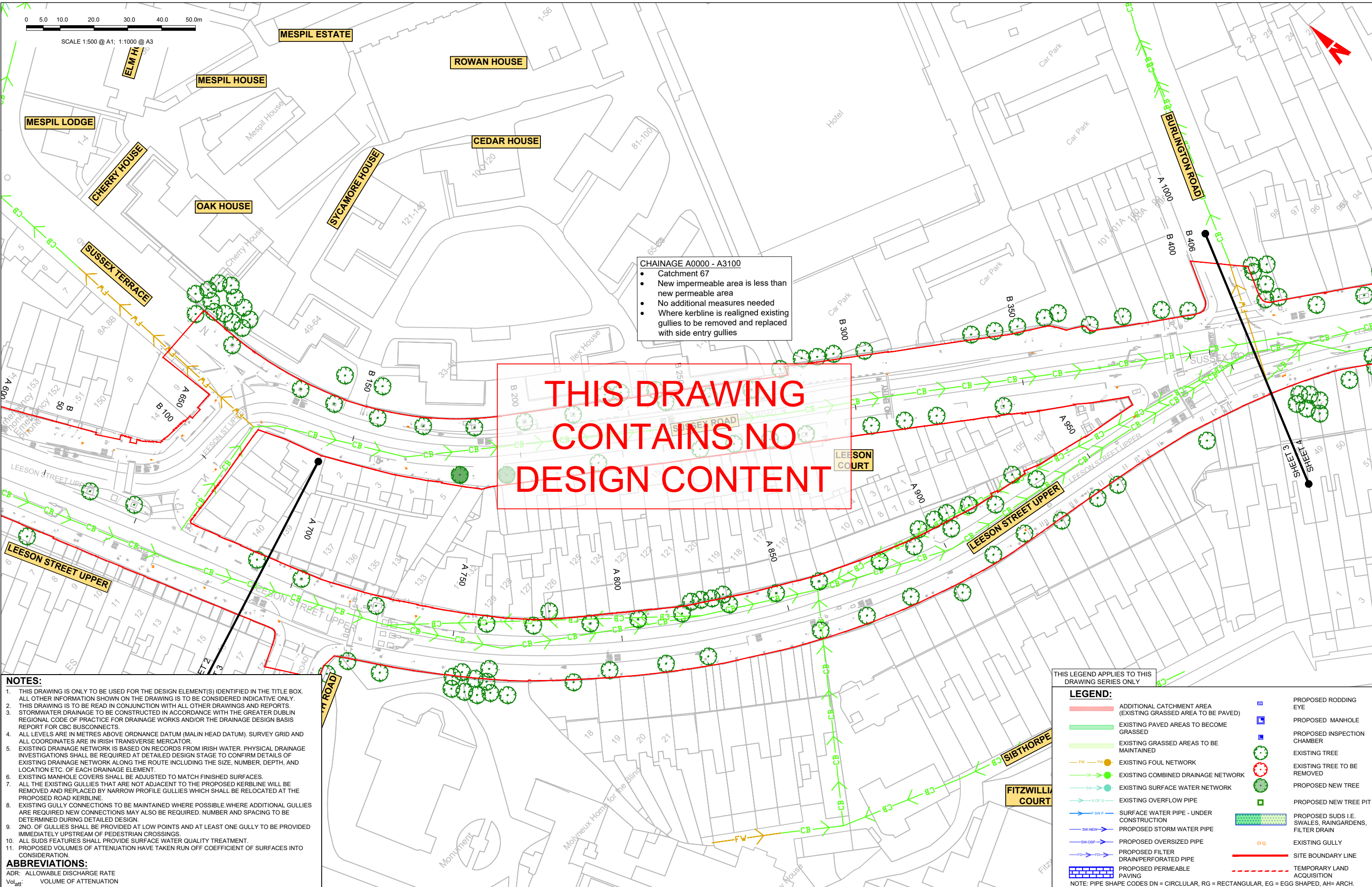
Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b>			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0002	Sheet Number 02 of 54	Status A	Rev M01

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**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**THIS DRAWING CONTAINS NO DESIGN CONTENT**

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**ABBREVIATIONS:**

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

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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/PERFORMED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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Rev	Date	Drn	Chk'd	App'd	Description
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Client: **NTA**  
Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB  
Originator Code: JAC  
OMS Code:

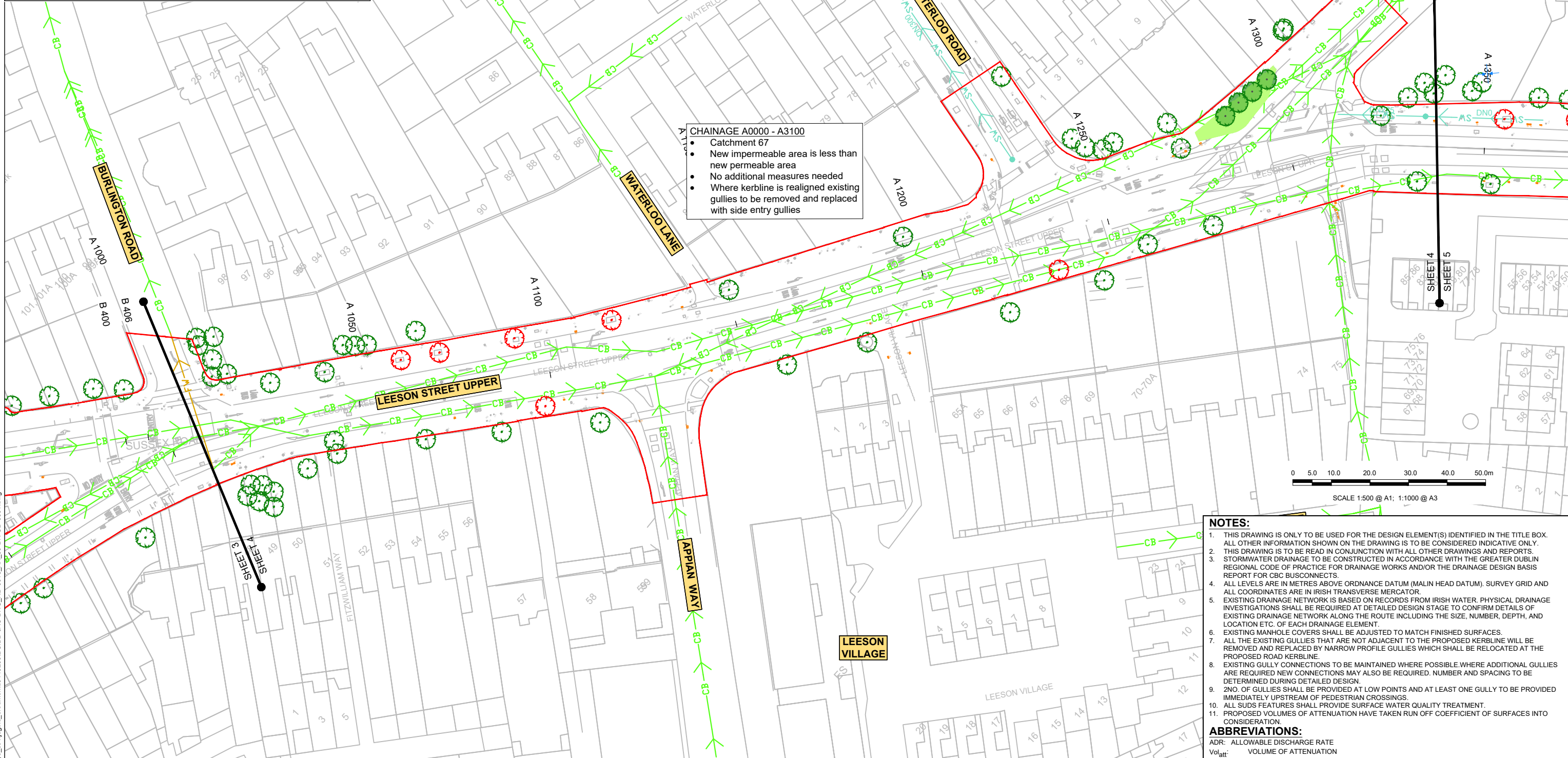
Programme Title			
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0003	03 of 54	A	M01

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

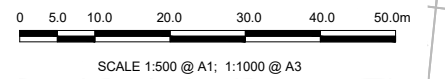
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
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**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines is realigned existing gullies to be removed and replaced with side entry gullies



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Client: **NTA**  
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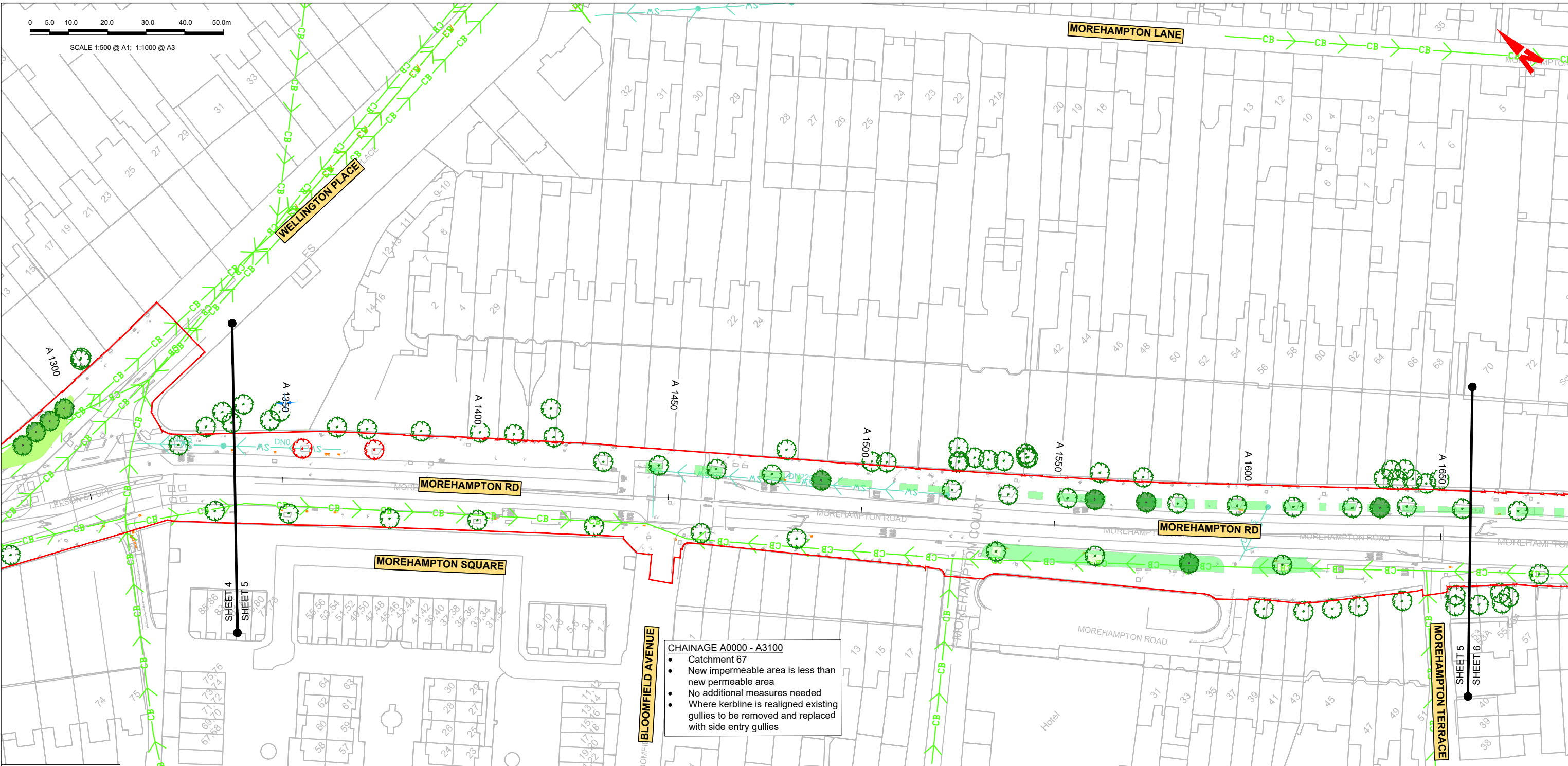
Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
Drawing Title: <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0004			
Sheet Number: 04 of 54	Status: A	Rev: M01	

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**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
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LEGEND:	
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 Ódaráis Náisiúnta Iompair  
 National Transport Authority

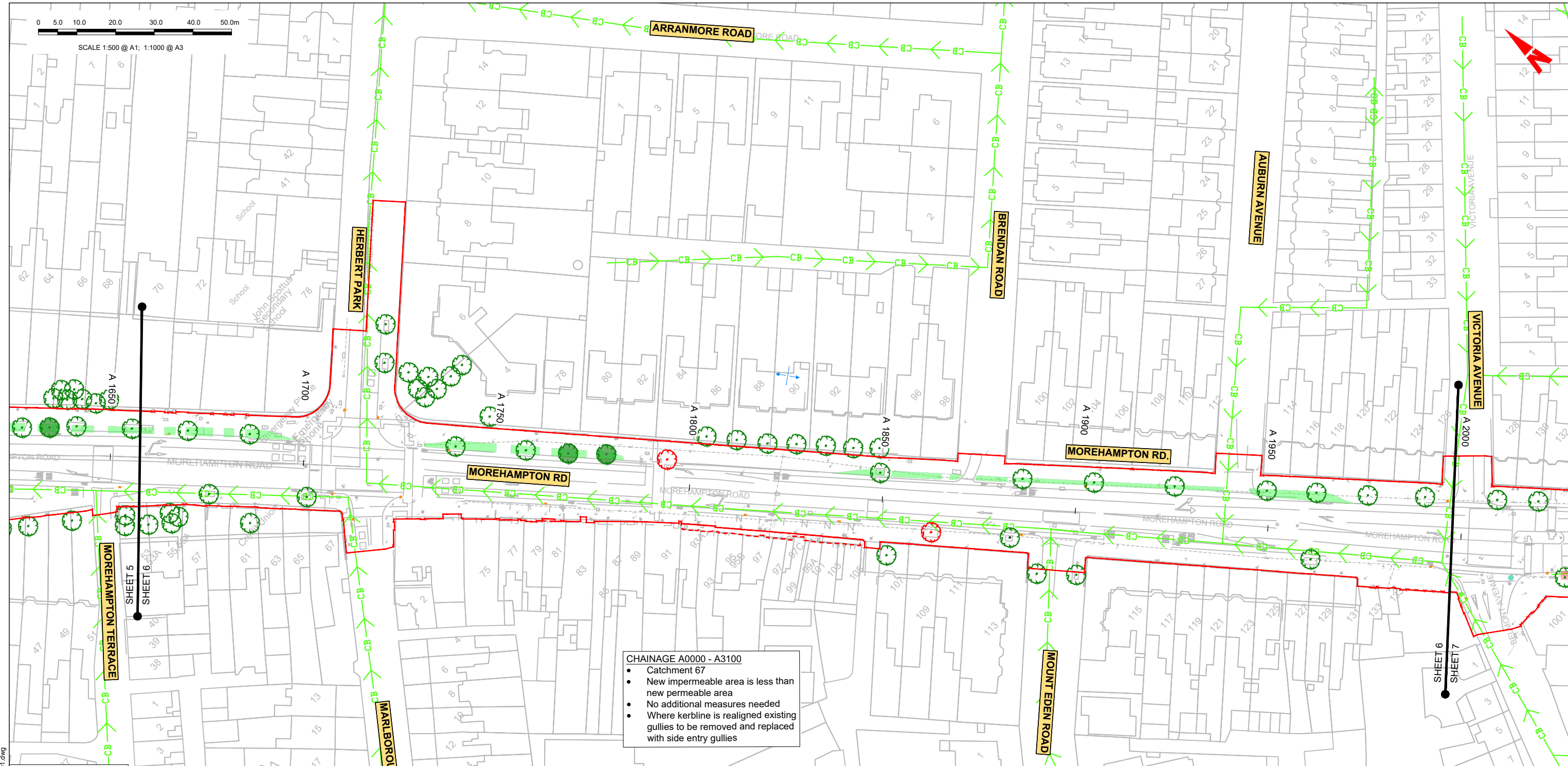
Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code:

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
Drawing Title: <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0005			
Sheet Number: 05 of 54	Status: A	Rev: M01	

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**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned 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
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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

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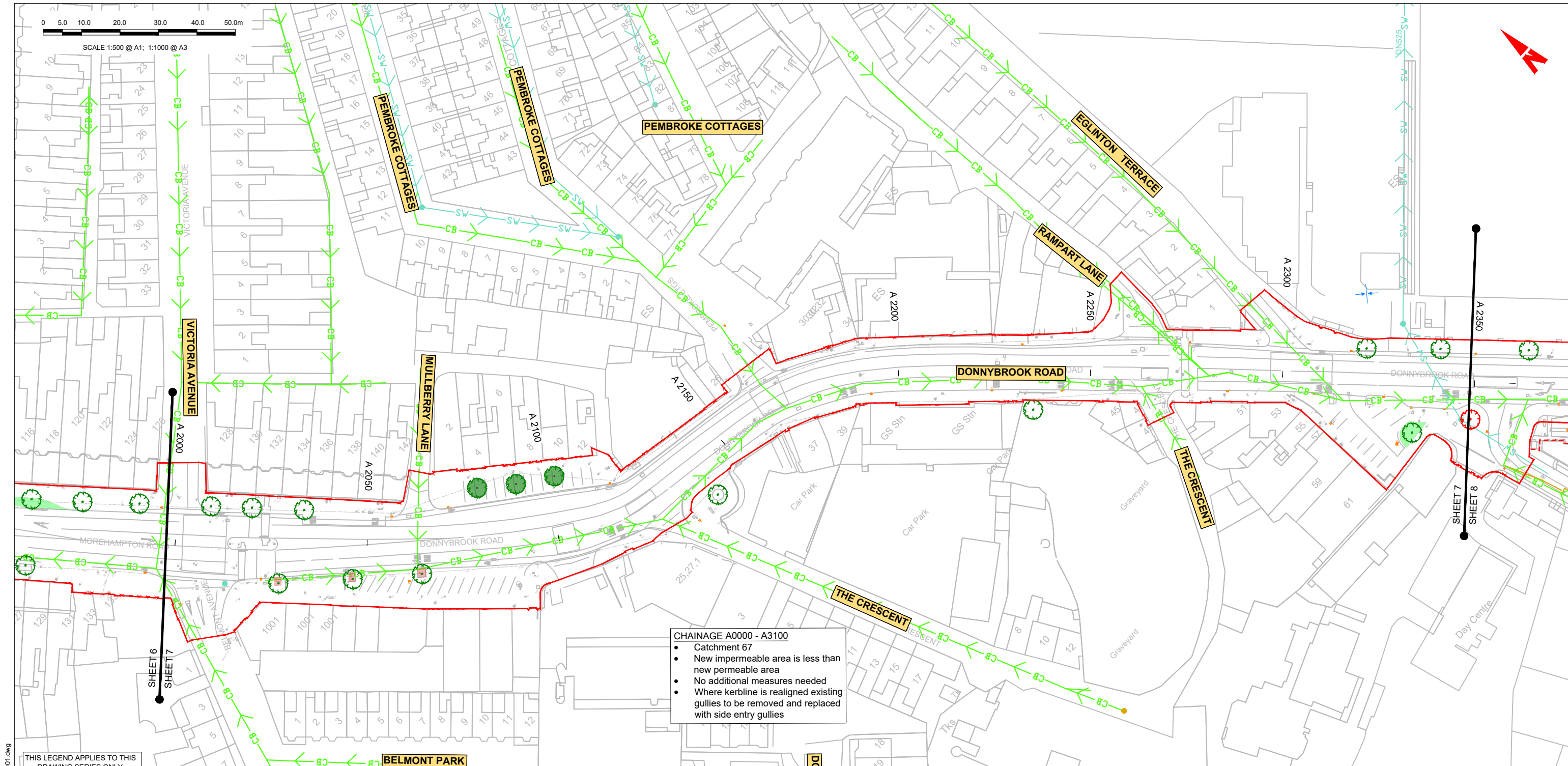
Client: **NTA**  
Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0006	Sheet Number 06 of 54	Status A	Rev M01

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**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

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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
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6. EXISTING MANHOLE COVERS TO BE ADJUSTED TO MATCH FINISHED SURFACE.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE DEMOLISHED, REPLACED BY SPLIT GULLIES AND RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. ALL THE EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE.
9. NEW SPLIT GULLIES AND CONNECTIONS WILL BE REQUIRED. NO. OF AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
10. 2NO. OF GULLIES TO BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
11. ALL SUDS FEATURES WILL PROVIDE ATTENUATION AND SURFACE WATER QUALITY TREATMENT 12. 'NET IMPERMEABLE AREA TO BE ATTENUATED' HAS PERMEABILITY FACTORS APPLIED.

**ABBREVIATIONS:**

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

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

Engineering Designer: **Jacobs**

Date: 08/05/2023 | Scale: 1:500 @ A1, 1:1000 @ A3 | Drawn: BD | Checked: NS | Approved: RS

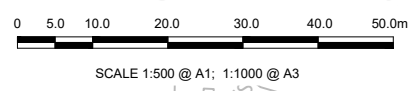
Project Code: BCIDB | Originator Code: JAC | QMS Code:

Programme Title: <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title: <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0007	Sheet Number: 07 of 54	Status: A	Rev: M01

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



**CHAINAGE A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
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	SURFACE WATER PIPE - UNDER CONSTRUCTION
	PROPOSED STORM WATER PIPE
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	EXISTING TREE
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	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
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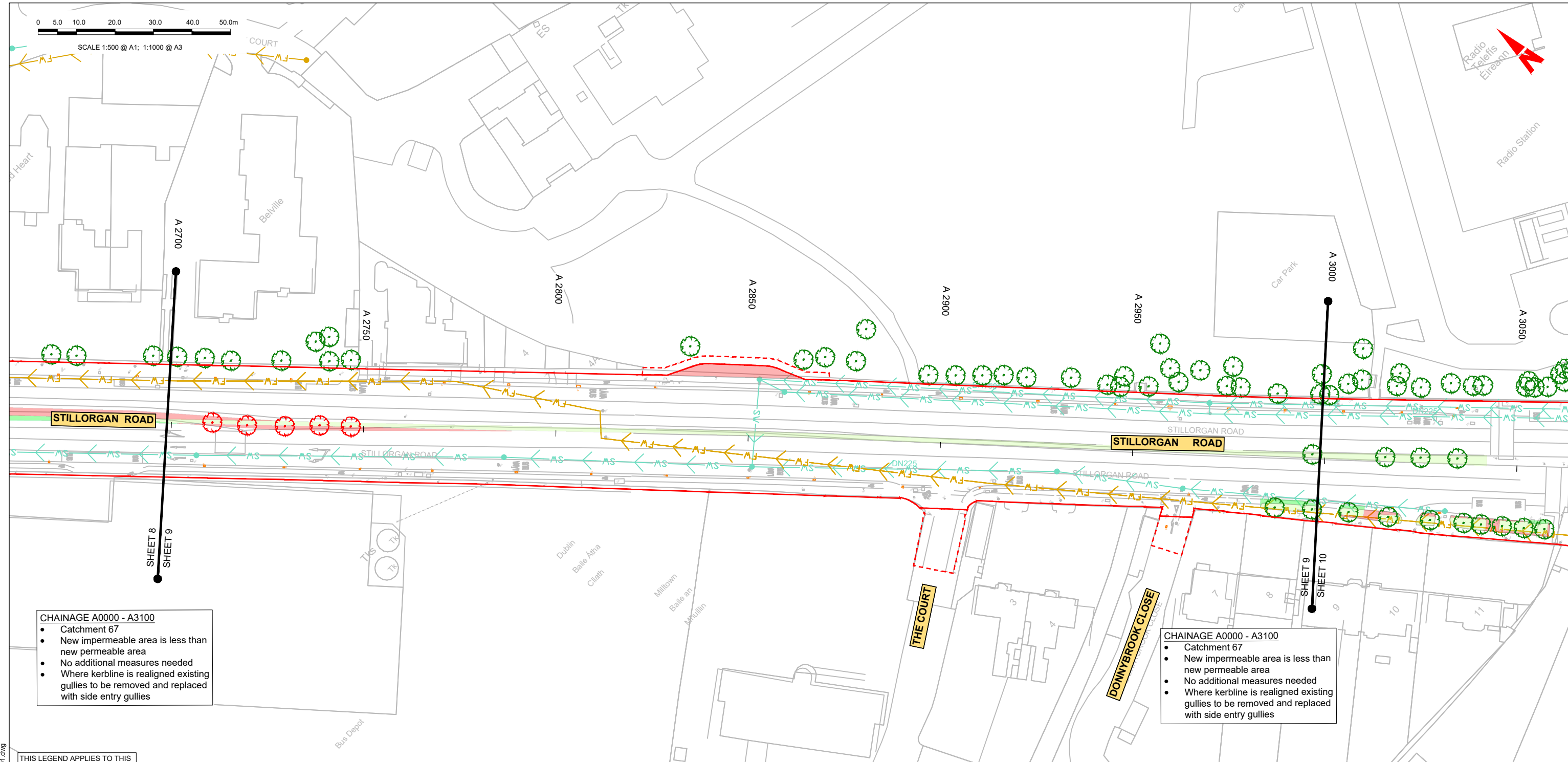
Client: **NTA**  
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 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title			
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0008	08 of 54	A	M01

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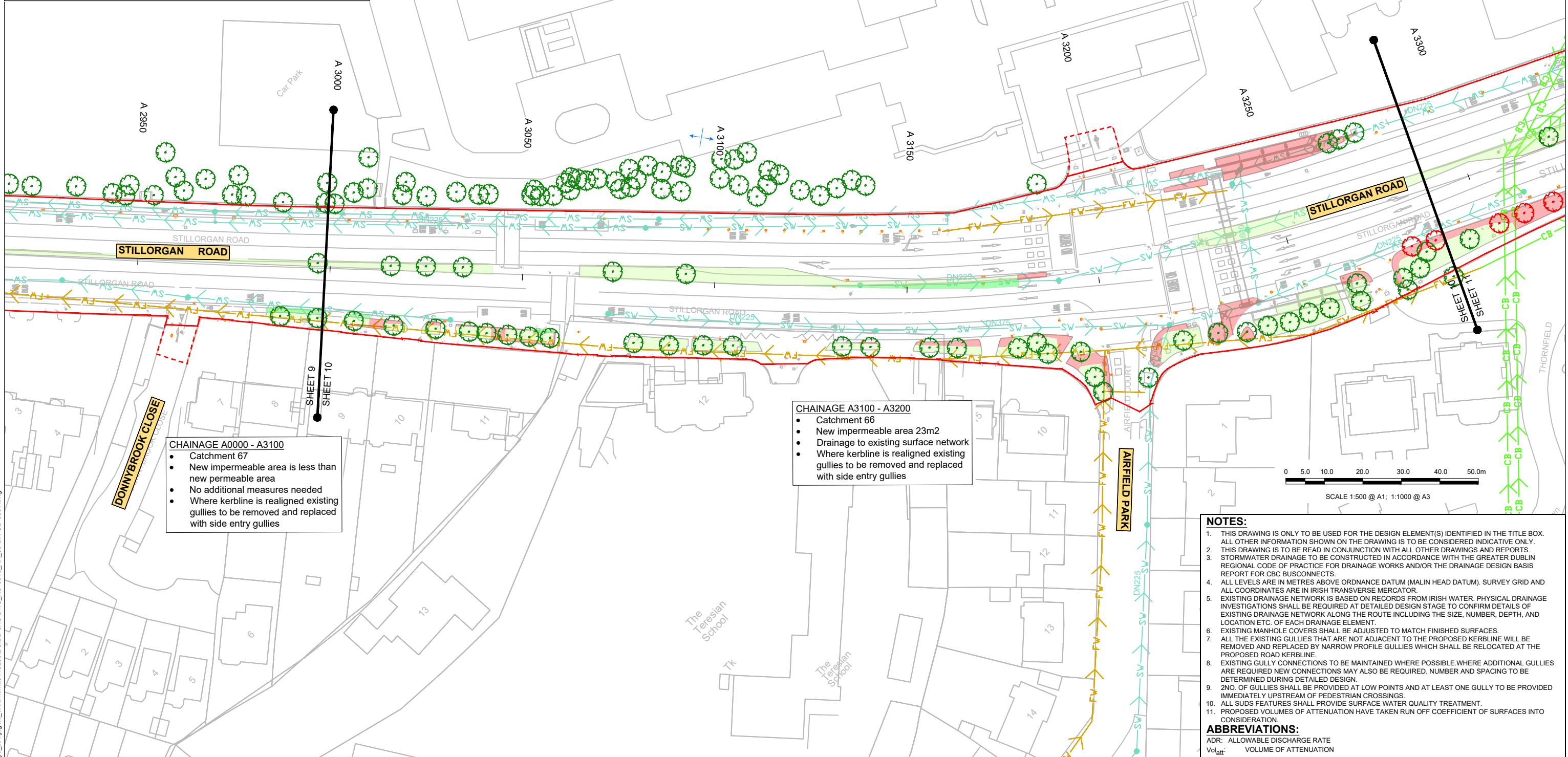
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Drawing File Name	Sheet Number	Status	Rev	
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0009	09 of 54	A	M01	

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	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 A0000 - A3100**

- Catchment 67
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A3100 - A3200**

- Catchment 66
- New impermeable area 23m2
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

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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.
  - ZNO. 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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**Project Ireland 2040**  
 Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023  
 Scale: 1:500 @ A1, 1:1000 @ A3  
 Project Code: BCIDB  
 Originator Code: JAC  
 OMS Code: [blank]

Drawn: BD  
 Checked: NS  
 Approved: RS

Programme Title			
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name			
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0010			
Sheet Number	Status	Rev	
10 of 54	A	M01	

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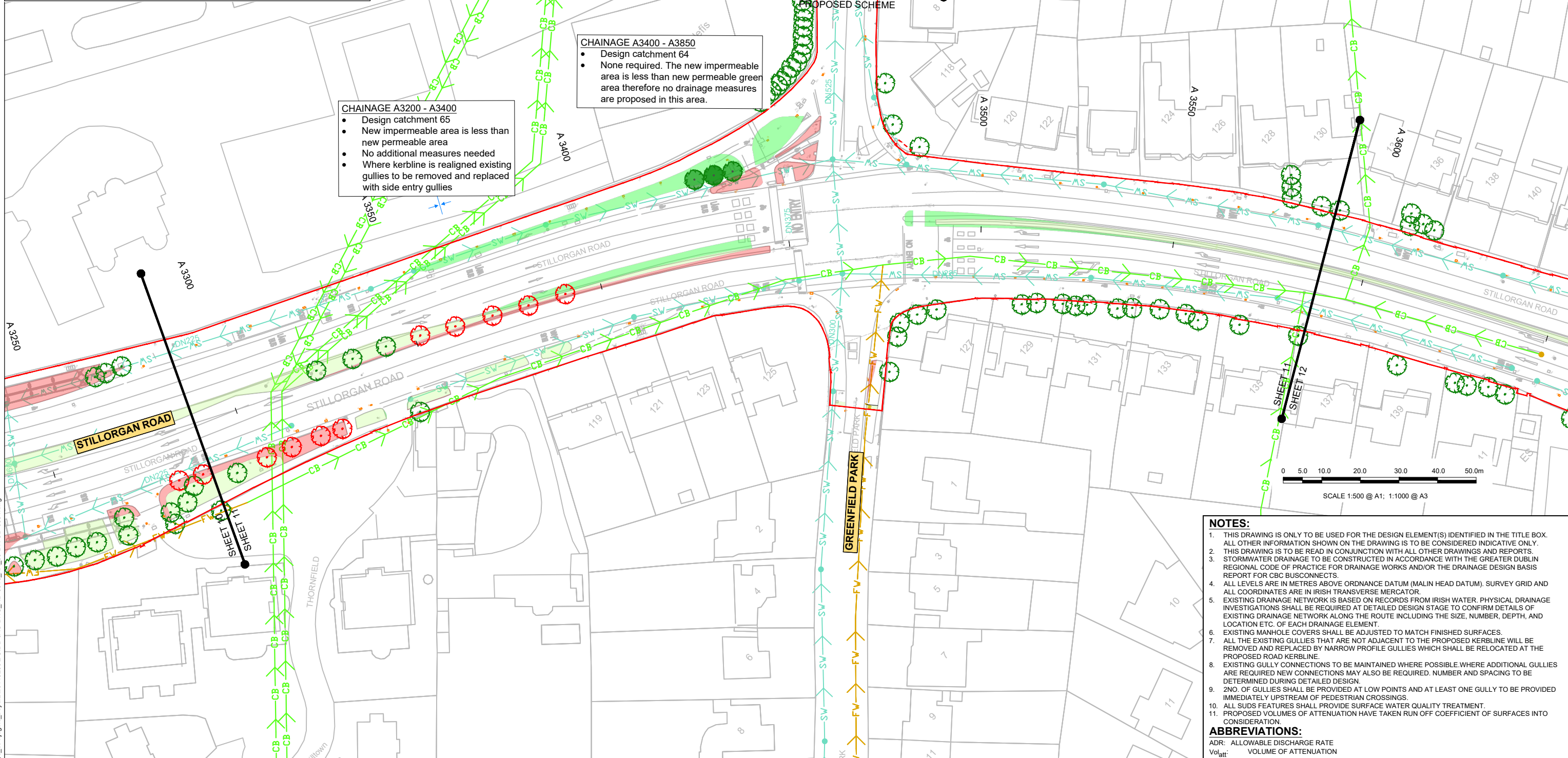


THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
- EXISTING PAVED AREAS TO BECOME GRASSED
- EXISTING GRASSED AREAS TO BE MAINTAINED
- EXISTING FOUL NETWORK
- EXISTING COMBINED DRAINAGE NETWORK
- EXISTING SURFACE WATER NETWORK
- EXISTING OVERFLOW PIPE
- SURFACE WATER PIPE - UNDER CONSTRUCTION
- PROPOSED STORM WATER PIPE
- PROPOSED OVERSIZED PIPE
- PROPOSED FILTER DRAIN/PERFORATED PIPE
- PROPOSED PERMEABLE PAVING
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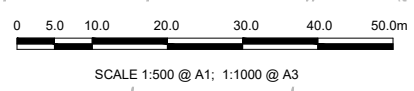


**CHAINAGE A3200 - A3400**

- Design catchment 65
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A3400 - A3850**

- Design catchment 64
- None required. The new impermeable area is less than new permeable green area therefore no drainage measures are proposed in this area.



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**Project Ireland 2040**  
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 Údarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer: **Jacobs**

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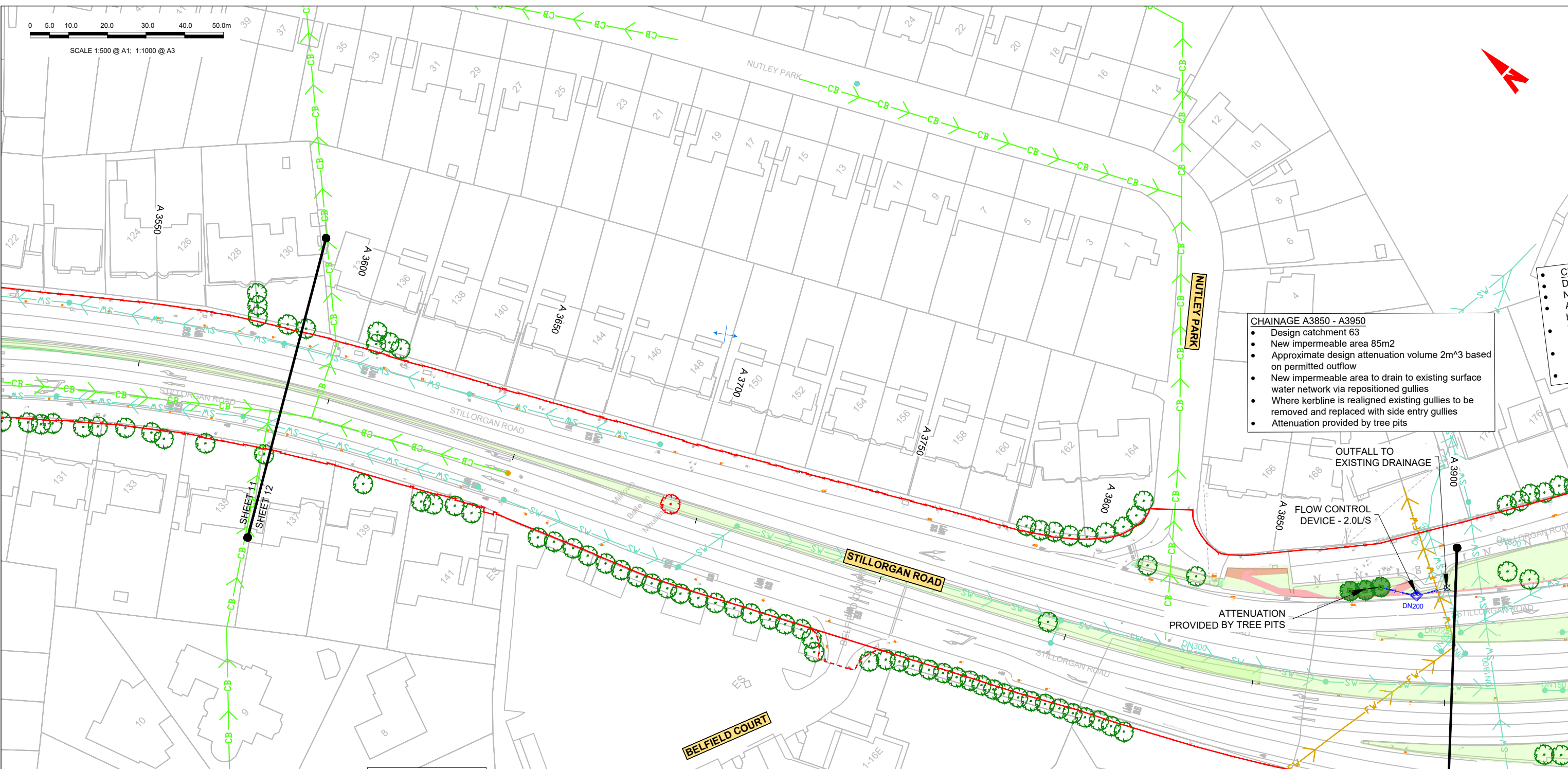
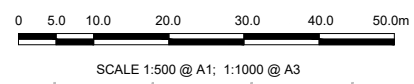
Drawn: BD  
 Checked: NS  
 Approved: RS

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

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

Drawing File Name: BCIDB-JAC-DNG\_RD-0013\_XX\_00-DR-CD-0011  
 Sheet Number: 11 of 54  
 Status: A  
 Rev: M01

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**CHAINAGE A3850 - A3950**

- Design catchment area 63
- New impermeable area 85m<sup>2</sup>
- Approximate design attenuation volume 2m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

**NOTES:**

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**ABBREVIATIONS:**

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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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

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

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Building Ireland's Future

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Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

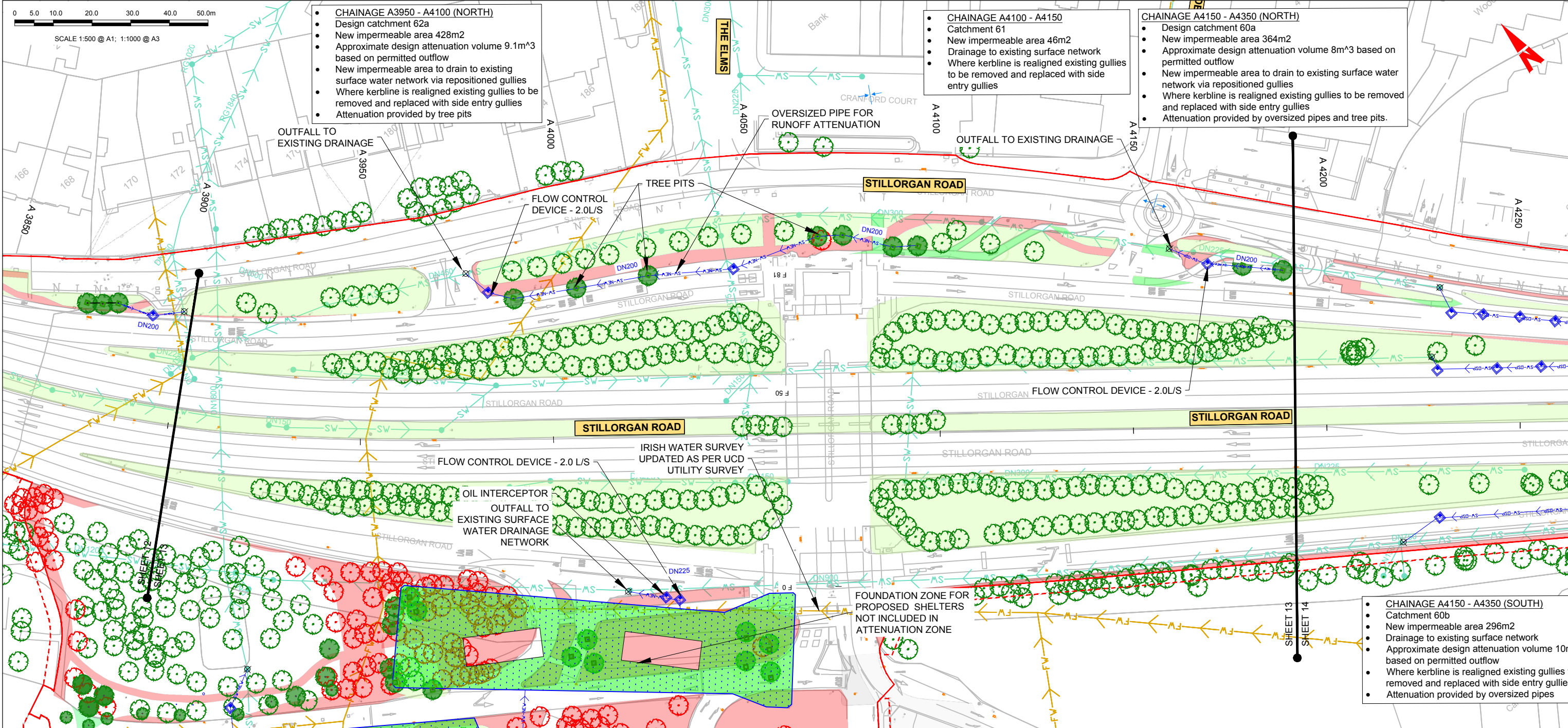
Date	Scale	Drawn	Checked	Approved
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Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0012	12 of 54	A	M01

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**CHAINAGE A3950 - A4100 (NORTH)**

- Design catchment 62a
- New impermeable area 428m<sup>2</sup>
- Approximate design attenuation volume 9.1m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

**CHAINAGE A4100 - A4150**

- Catchment 61
- New impermeable area 46m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A4150 - A4350 (NORTH)**

- Design catchment 60a
- New impermeable area 364m<sup>2</sup>
- Approximate design attenuation volume 8m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes and tree pits.

**CHAINAGE A4150 - A4350 (SOUTH)**

- Catchment 60b
- New impermeable area 296m<sup>2</sup>
- Drainage to existing surface network
- Approximate design attenuation volume 10m<sup>3</sup> based on permitted outflow
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A3850 - A4100 (SOUTH)**

- Design catchment 62b
- New impermeable area 4291m<sup>2</sup>
- Approximate design attenuation volume 330m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation to be provided by capping layer (see Note 12)

**CAPPING LAYER ATTENUATION VOLUME 265m<sup>3</sup>, CAPPING LAYER DEPTH ASSUMED AT 600mm AND TO BE CONFIRMED AT DETAILED DESIGN. VOID RATIO 0.25. WATERPROOF SEPARATION MEMBRANE BETWEEN CAPPING LAYER AND SUB-BASE. GULLIES TO DISCHARGE DIRECTLY TO ATTENUATION AREA**

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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	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		EGG SHAPED, AH= ARCH.

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12. ALL CAPPING DEPTHS AND ASSOCIATED Vol<sub>att</sub> ARE SUBJECT TO CONFIRMATION AT DETAILED DESIGN FOLLOWING COMPLETION OF FURTHER SITE SURVEY AND INVESTIGATION WORK.

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<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
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BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0013	13 of 54	A	M01

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**CHAINAGE A4150 - A4350 (NORTH)**

- Design catchment 60a
- New impermeable area 364m<sup>2</sup>
- Approximate design attenuation volume 8m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes and tree pits.

**CHAINAGE A4350 - A4600 (NORTH)**

- Design catchment 59a
- New impermeable area 678m<sup>2</sup>
- Approximate design attenuation volume 20m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A4350 - A4600 (SOUTH)**

- Catchment 59b
- New impermeable area 240m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A4150 - A4350 (SOUTH)**

- Catchment 60b
- New impermeable area 296m<sup>2</sup>
- Drainage to existing surface network
- Approximate design attenuation volume 10m<sup>3</sup> based on permitted outflow
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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	Chkd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

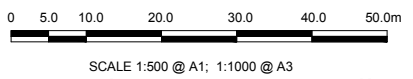
Programme Title <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0014	Sheet Number 14 of 54	Status A	Rev M01

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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.
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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:**

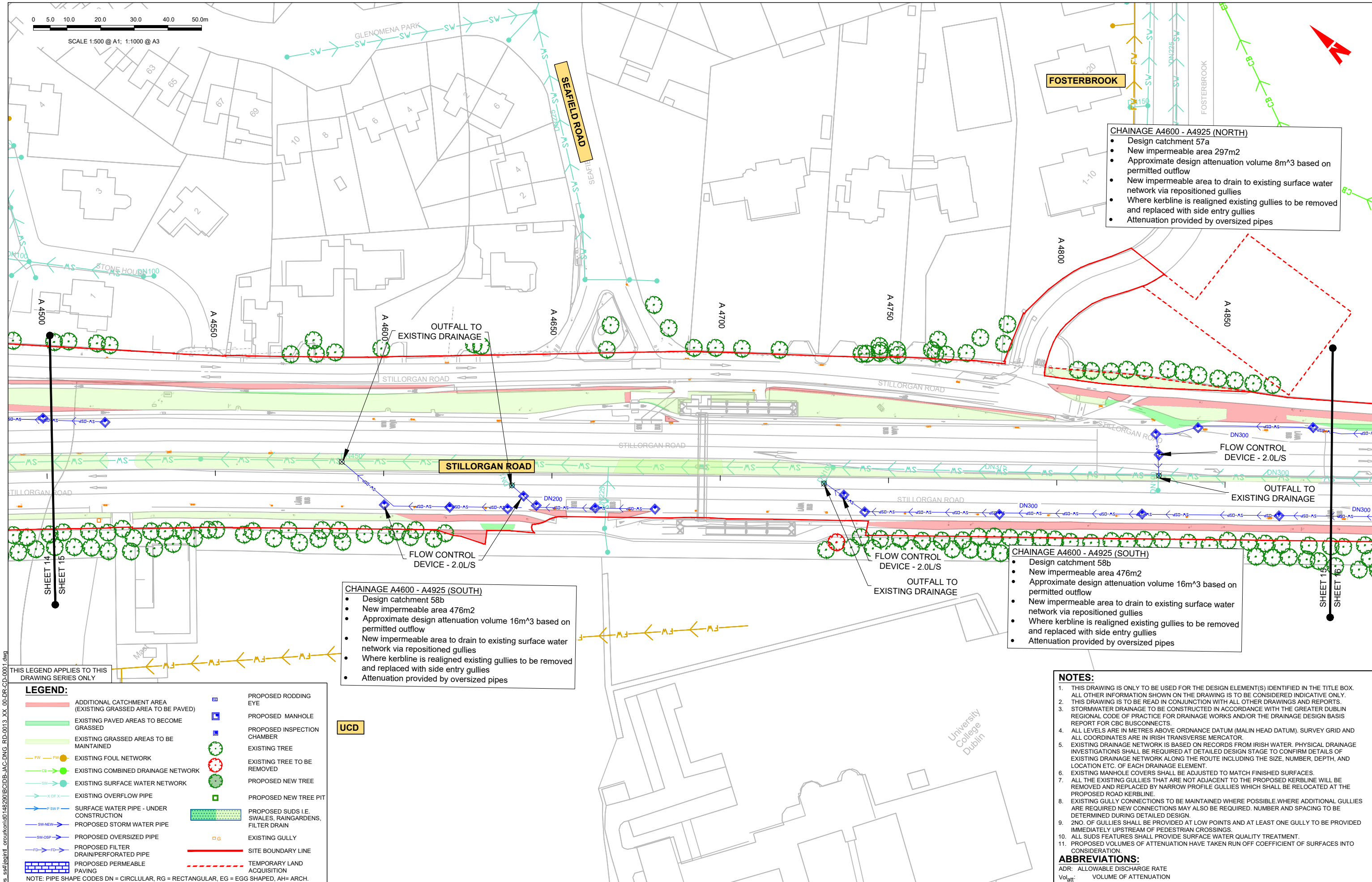
ADR: ALLOWABLE DISCHARGE RATE  
Vol<sub>att</sub>: VOLUME OF ATTENUATION



UCD

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**CHAINAGE A4600 - A4925 (NORTH)**

- Design catchment 57a
- New impermeable area 297m<sup>2</sup>
- Approximate design attenuation volume 8m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A4600 - A4925 (SOUTH)**

- Design catchment 58b
- New impermeable area 476m<sup>2</sup>
- Approximate design attenuation volume 16m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A4600 - A4925 (SOUTH)**

- Design catchment 58b
- New impermeable area 476m<sup>2</sup>
- Approximate design attenuation volume 16m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

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

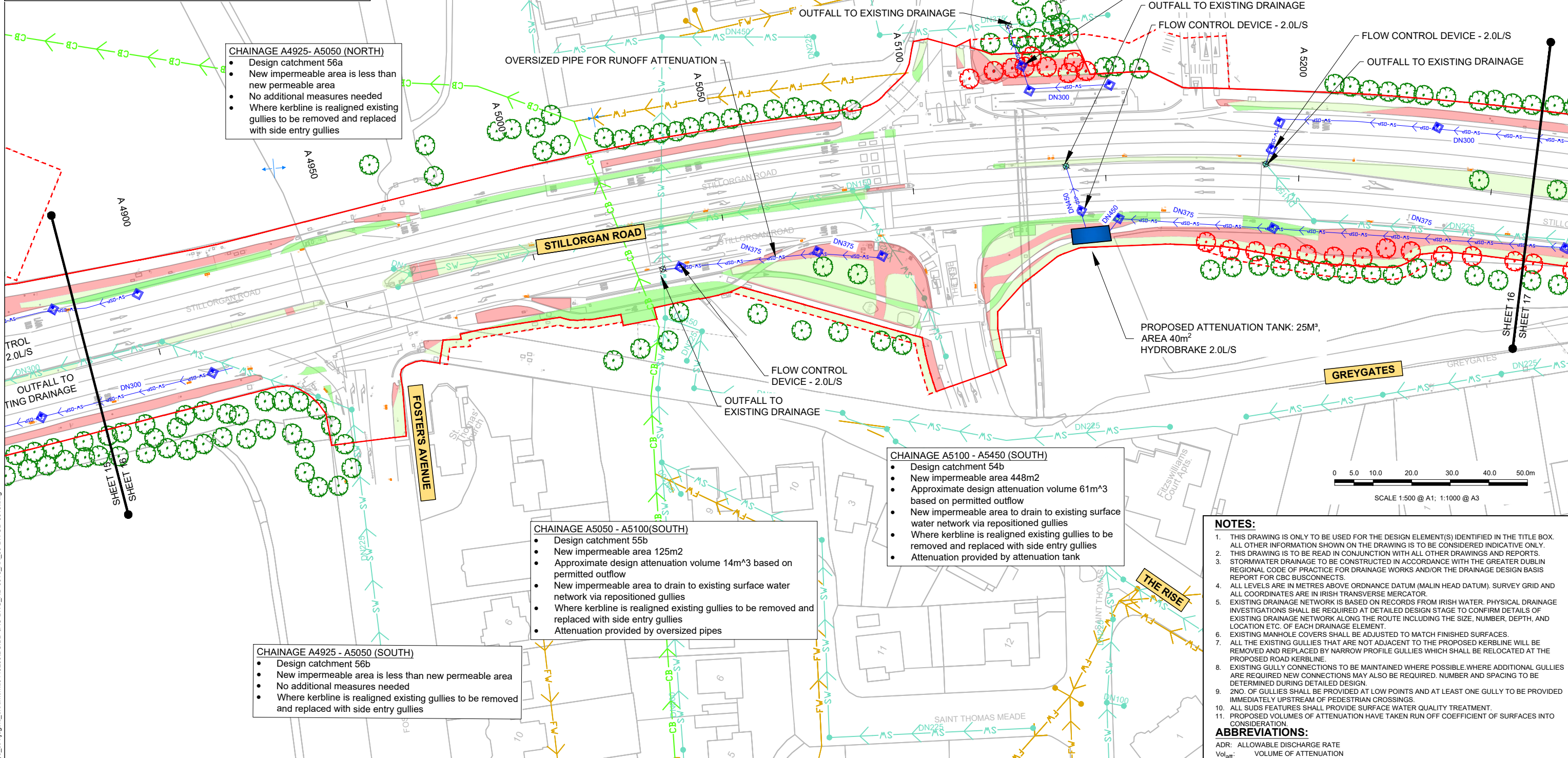
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Rev	Date	Drn	Chk'd	App'd	Description														
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING														
<p>Date: 08/05/2023 Scale: 1:50@A1, 1:100@A3</p> <p>Project Code: BCIDB Originator Code: JAC</p> <p>Drawn: BD Checked: NS Approved: RS</p> <p>Project Code: BCIDB OMS Code: JAC</p>						<p>Drawing Title</p> <p>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME          PROPOSED SURFACE WATER DRAINAGE WORKS</p>													
<p>Drawing File Name: BCIDB-JAC-DNG RD-0013_XX_00-DR-CD-0015</p> <p>Sheet Number: 15 of 54 Status: A Rev: M01</p>						<p>DO NOT SCALE USE FIGURED DIMENSIONS ONLY</p>													

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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
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**CHAINAGE A4925 - A5050 (NORTH)**

- Design catchment 56a
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A5050 - A5100 (NORTH)**

- Design catchment 55a
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A5100 - A5450 (NORTH)**

- Design catchment 54a
- New impermeable area 313m<sup>2</sup>
- Approximate design attenuation volume 8m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A5100 - A5450 (SOUTH)**

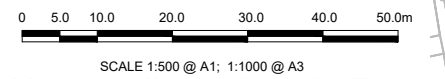
- Design catchment 54b
- New impermeable area 448m<sup>2</sup>
- Approximate design attenuation volume 61m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by attenuation tank

**CHAINAGE A5050 - A5100(SOUTH)**

- Design catchment 55b
- New impermeable area 125m<sup>2</sup>
- Approximate design attenuation volume 14m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A4925 - A5050 (SOUTH)**

- Design catchment 56b
- New impermeable area is less than new permeable area
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**ABBREVIATIONS:**

ADR: ALLOWABLE DISCHARGE RATE  
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**Project Ireland 2040**  
Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023  
Scale: 1:500 @ A1  
1:1000 @ A3

Drawn: BD  
Checked: NS  
Approved: RS

Project Code: BCIDB  
Originator Code: JAC  
OMS Code:

Programme Title	<b>BUSCONNECTS DUBLIN</b>		
Drawing Title	<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing File Name	BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0016	Sheet Number	16 of 54
Status	A	Rev	M01

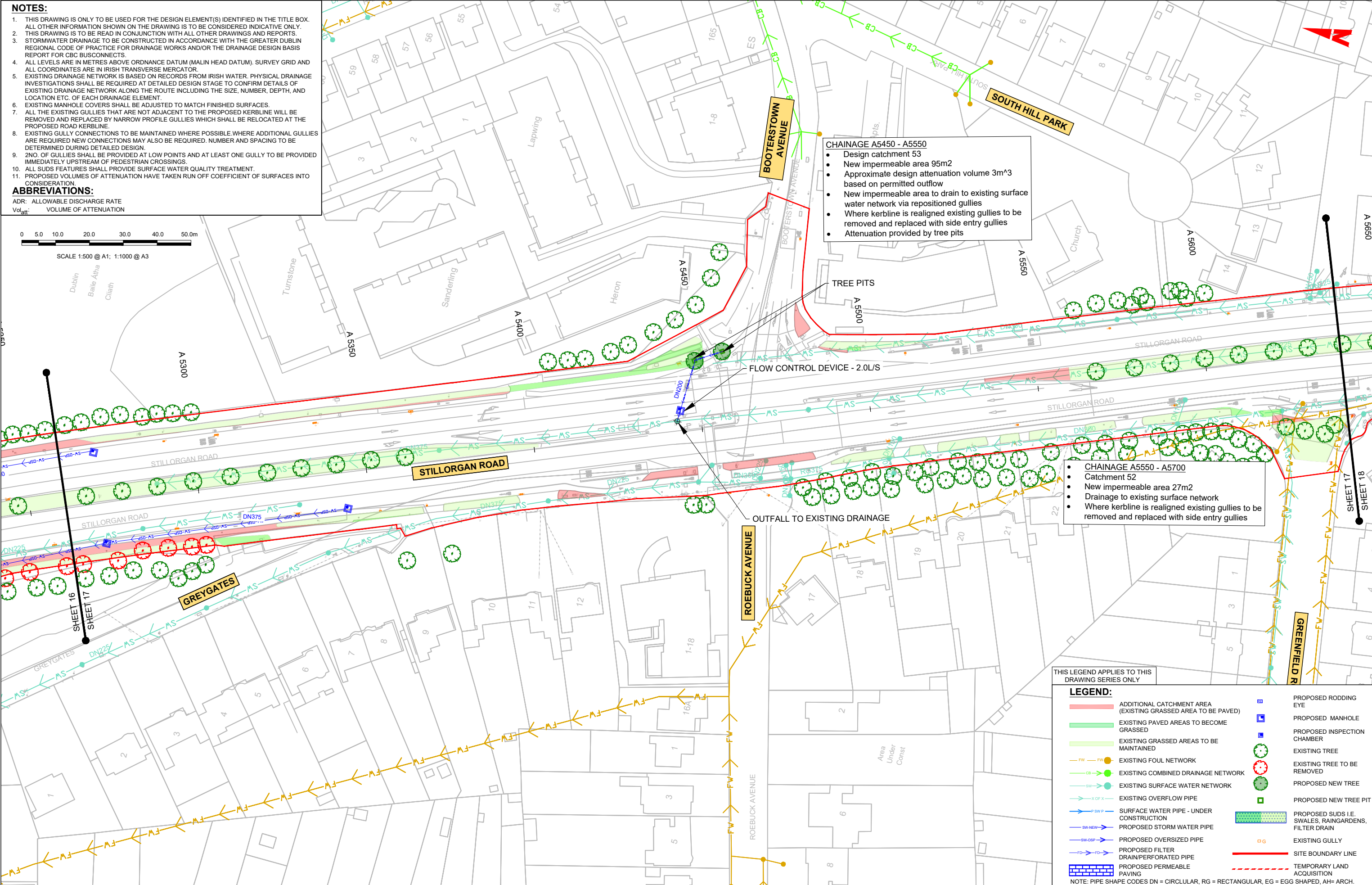
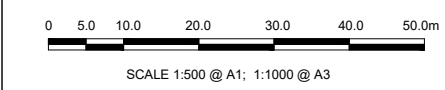
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	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE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

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023  
Scale: 1:500 @ A1  
1:1000 @ A3

Drawn: BD  
Checked: NS  
Approved: RS

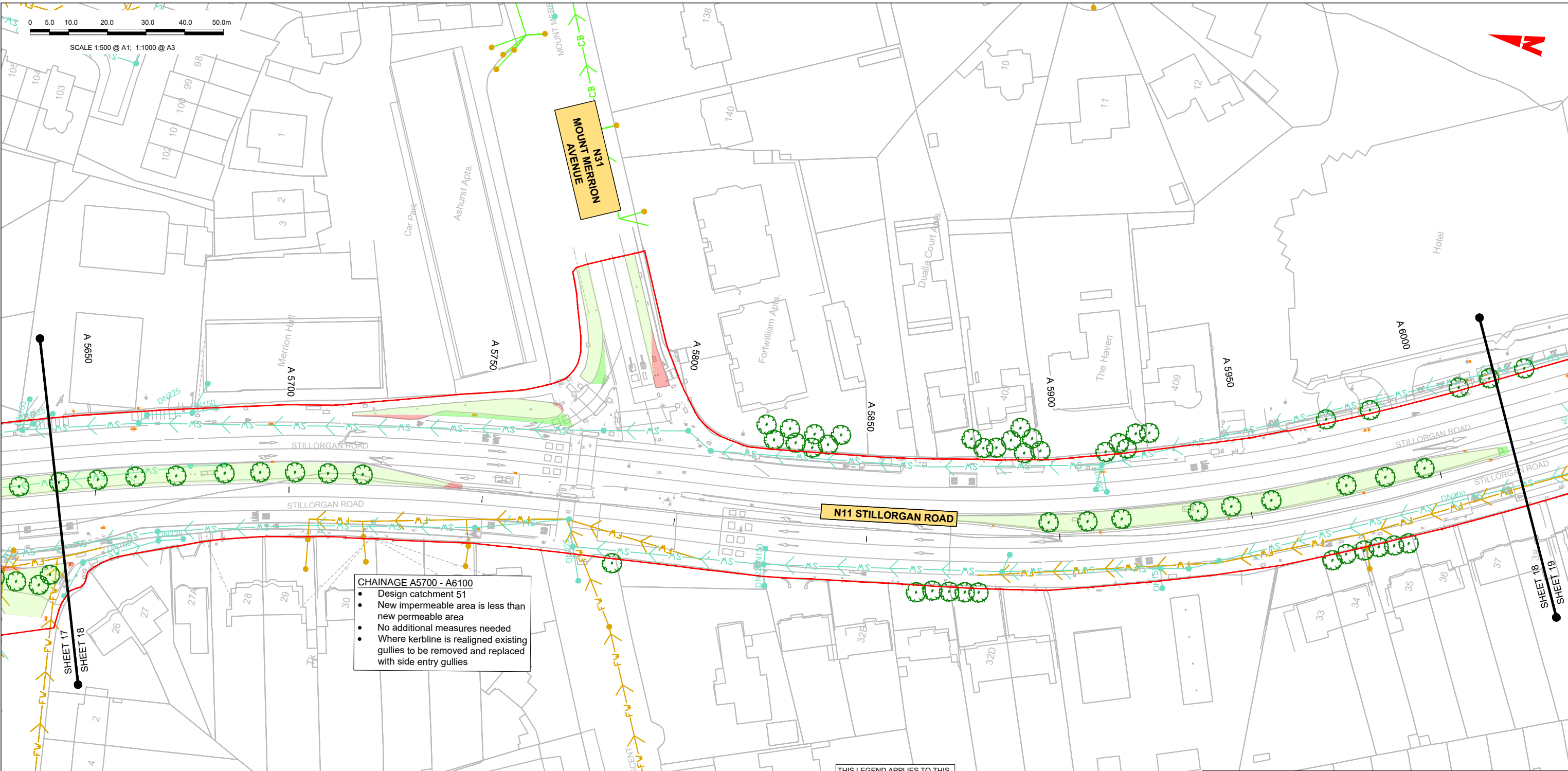
Project Code: BCIDB  
Originator Code: JAC  
QMS Code:

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0017	17 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



**CHAINAGE A5700 - A6100**

- Design catchment 51
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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

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Ódarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

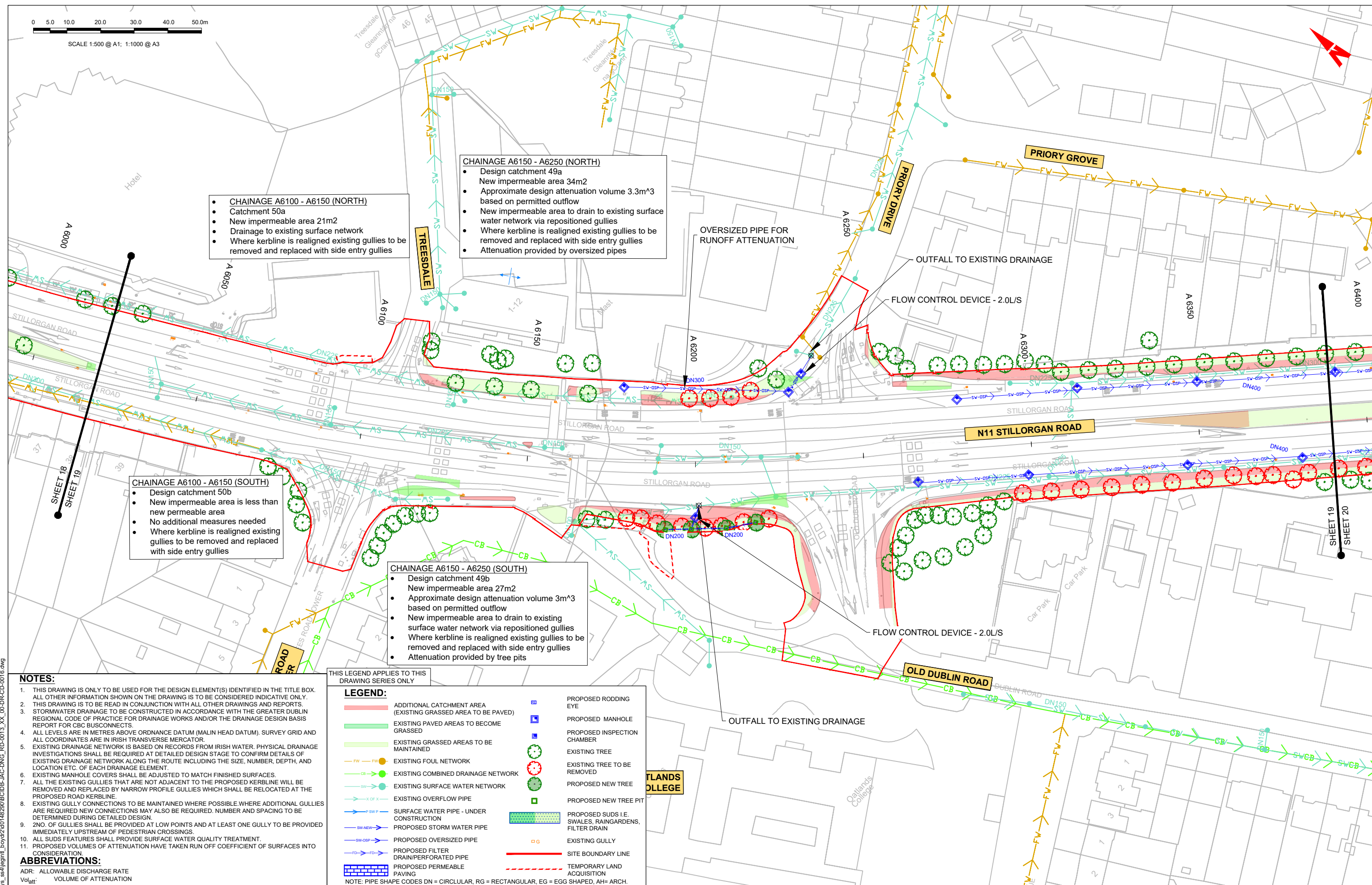
Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0018	18 of 54	A	M01

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



**CHAINAGE A6100 - A6150 (NORTH)**

- Catchment 50a
- New impermeable area 21m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A6150 - A6250 (NORTH)**

- Design catchment 49a
- New impermeable area 34m<sup>2</sup>
- Approximate design attenuation volume 3.3m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A6100 - A6150 (SOUTH)**

- Design catchment 50b
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A6150 - A6250 (SOUTH)**

- Design catchment 49b
- New impermeable area 27m<sup>2</sup>
- Approximate design attenuation volume 3m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE CHAMBER
	EXISTING GRASSED AREAS TO BE MAINTAINED		EXISTING TREE
	EXISTING FOUL NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING COMBINED DRAINAGE NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	SURFACE WATER PIPE - UNDER CONSTRUCTION		EXISTING GULLY
	PROPOSED STORM WATER PIPE		SITE BOUNDARY LINE
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M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code:

Programme Title <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b>			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0019	Sheet Number 19 of 54	Status A	Rev M01

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**ABBREVIATIONS:**

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

**CHAINAGE A6250 - A6550 (NORTH)**

- Design catchment 48a
- New impermeable area 602m<sup>2</sup>
- Approximate design attenuation volume 20m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A6550 - A6700 (NORTH)**

- Design catchment 47a
- New impermeable area 479m<sup>2</sup>
- Approximate design attenuation volume 14m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A6650 - A6800**

- Design catchment 46
- New impermeable area 170m<sup>2</sup>
- Approximate design attenuation volume 8.2m<sup>3</sup> based on permitted outflow
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by filter drain and pipe combination

**CHAINAGE A6250 - A6550 (SOUTH)**

- Design catchment 48b
- New impermeable area 626m<sup>2</sup>
- Approximate design attenuation volume 22m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

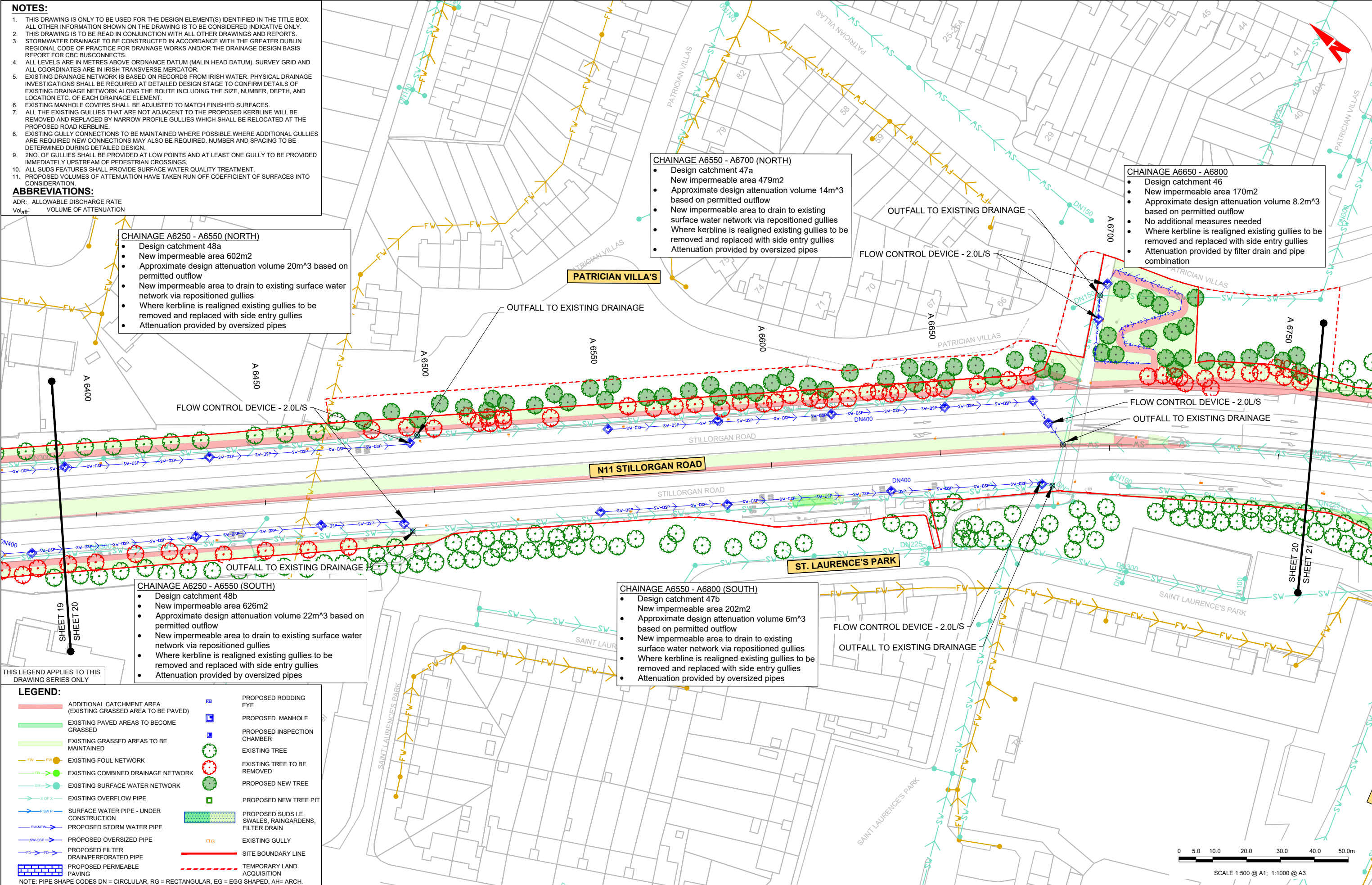
**CHAINAGE A6550 - A6800 (SOUTH)**

- Design catchment 47b
- New impermeable area 202m<sup>2</sup>
- Approximate design attenuation volume 6m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**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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Rev	Date	Dm	Chk'd	App'd	Description	Date	Scale	Drawn	Checked	Approved	Drawing Title	Drawing File Name	Sheet Number	Status	Rev
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING	08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS	BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0020	20 of 54	A	M01

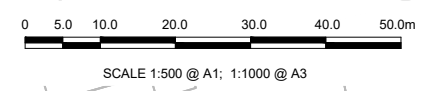
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- ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
- PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

**ABBREVIATIONS:**

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



**CHAINAGE A6850 - A7150 (NORTH)**

- Design catchment 44b
- New impermeable area 733m<sup>2</sup>
- Approximate design attenuation volume 24m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A6850 - A7150 (SOUTH)**

- Design catchment 44a
- New impermeable area 267m<sup>2</sup>
- Approximate design attenuation volume 17m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A6800 - A6850**

- Design catchment 45
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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 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		PROPOSED PERMEABLE PAVING
	PROPOSED FILTER DRAIN/PERFORATED PIPE		SITE BOUNDARY LINE
	PROPOSED PERMEABLE PAVING		TEMPORARY LAND ACQUISITION

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

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

Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023  
Scale: 1:500 @ A1  
1:1000 @ A3

Drawn: BD  
Checked: NS  
Approved: RS

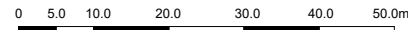
Project Code: BCIDB  
Originator Code: JAC  
OMS Code:

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

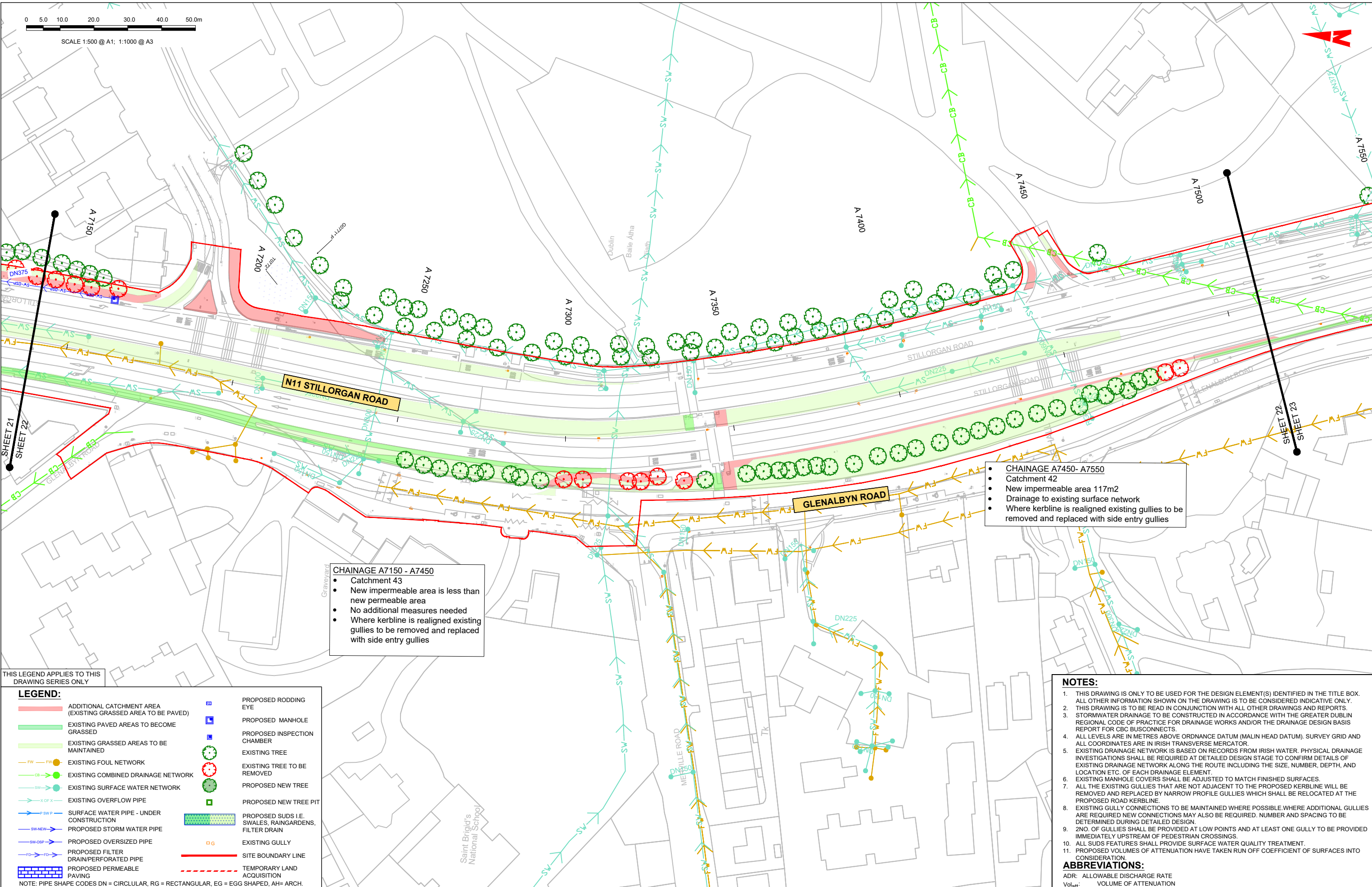
Drawing Title: **BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME**  
**PROPOSED SURFACE WATER DRAINAGE WORKS**

Drawing File Name: BCIDB-JAC-DNG\_RD-0013\_XX\_00-DR-CD-0021  
Sheet Number: 21 of 54  
Status: A  
Rev: M01

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



SHEET 21  
SHEET 22

SHEET 22  
SHEET 23

**CHAINAGE A7150 - A7450**

- Catchment 43
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A7450- A7550**

- Catchment 42
- New impermeable area 117m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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

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

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- 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	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

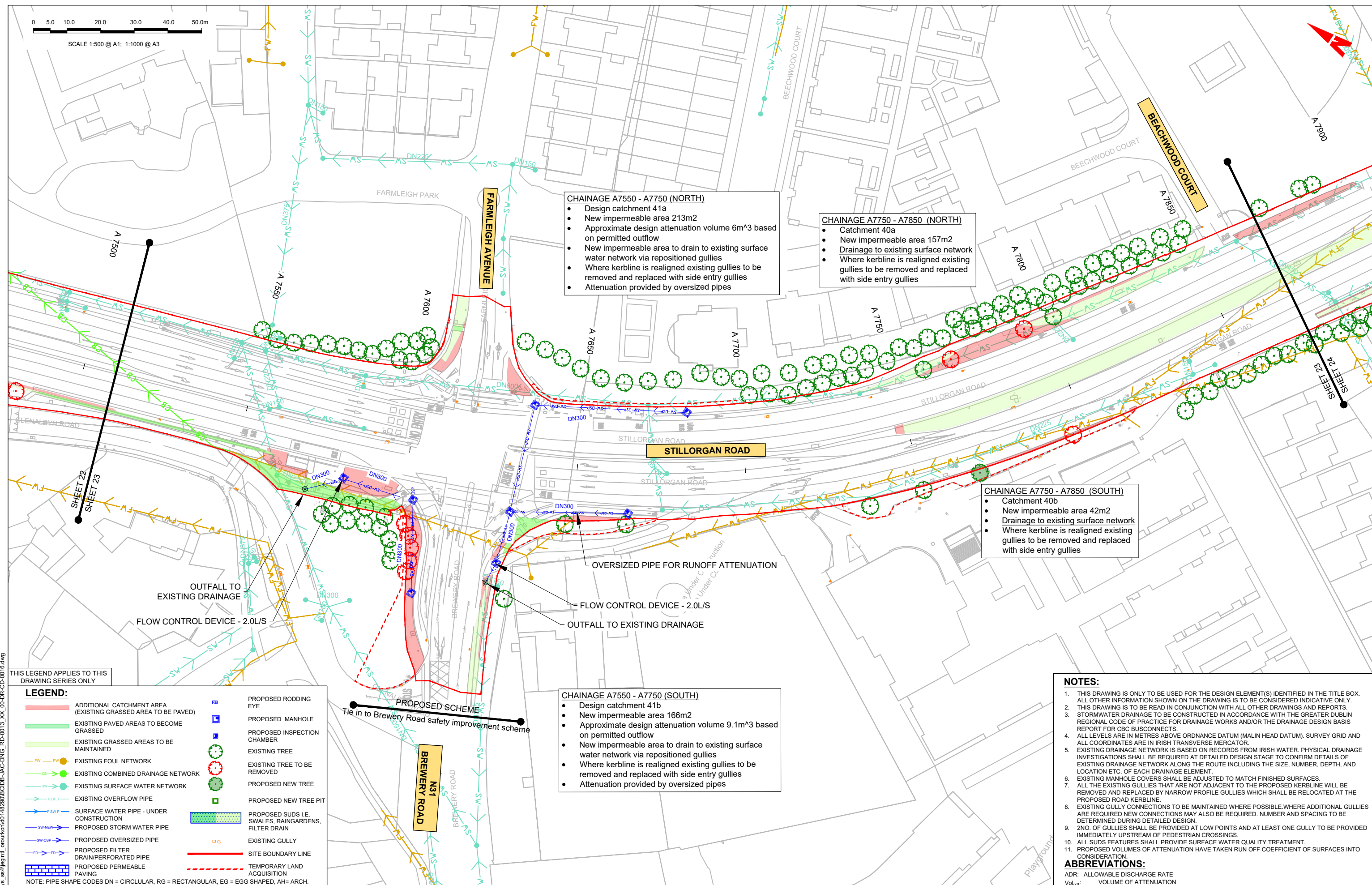
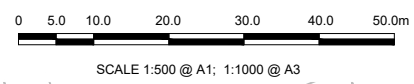
Client: **NTA**  
Ódarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0022	22 of 54	A	M01

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**CHAINAGE A7550 - A7750 (NORTH)**

- Design catchment 41a
- New impermeable area 213m<sup>2</sup>
- Approximate design attenuation volume 6m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A7750 - A7850 (NORTH)**

- Catchment 40a
- New impermeable area 157m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A7750 - A7850 (SOUTH)**

- Catchment 40b
- New impermeable area 42m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A7550 - A7750 (SOUTH)**

- Design catchment 41b
- New impermeable area 166m<sup>2</sup>
- Approximate design attenuation volume 9.1m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

OUTFALL TO EXISTING DRAINAGE  
FLOW CONTROL DEVICE - 2.0L/S

OVERSIZED PIPE FOR RUNOFF ATTENUATION  
FLOW CONTROL DEVICE - 2.0L/S  
OUTFALL TO EXISTING DRAINAGE

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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 IMPERMEABLE PAVING		

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**ABBREVIATIONS:**

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

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Building Ireland's Future

Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code:

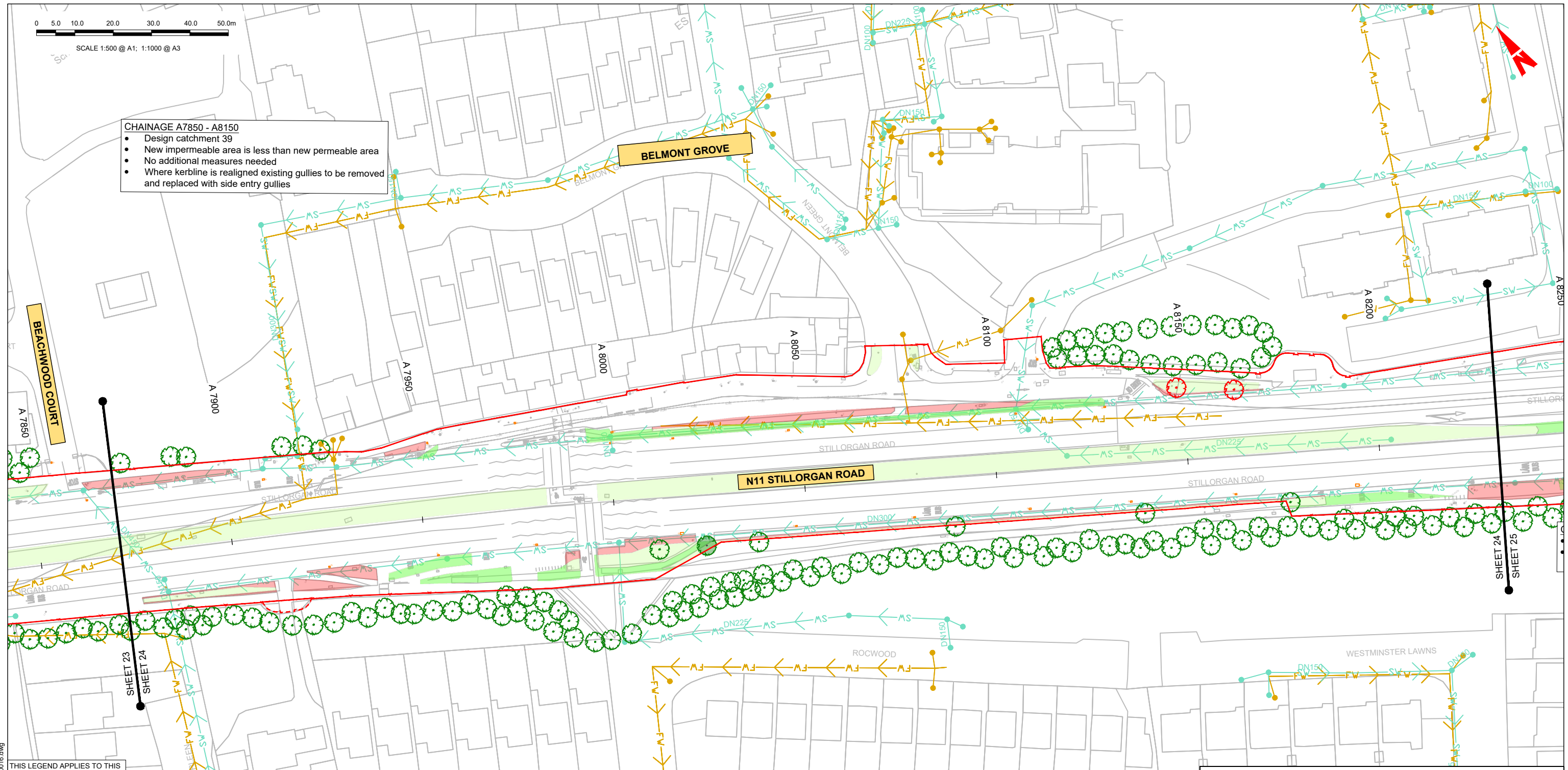
Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0023	Sheet Number	23 of 54
Status	A	Rev	M01

0 5.0 10.0 20.0 30.0 40.0 50.0m

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

**CHAINAGE A7850 - A8150**

- Design catchment 39
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies



THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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 PAVING                    |

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**ABBREVIATIONS:**

- ADR: ALLOWABLE DISCHARGE RATE  
Vol: VOLUME OF ATTENUATION

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Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

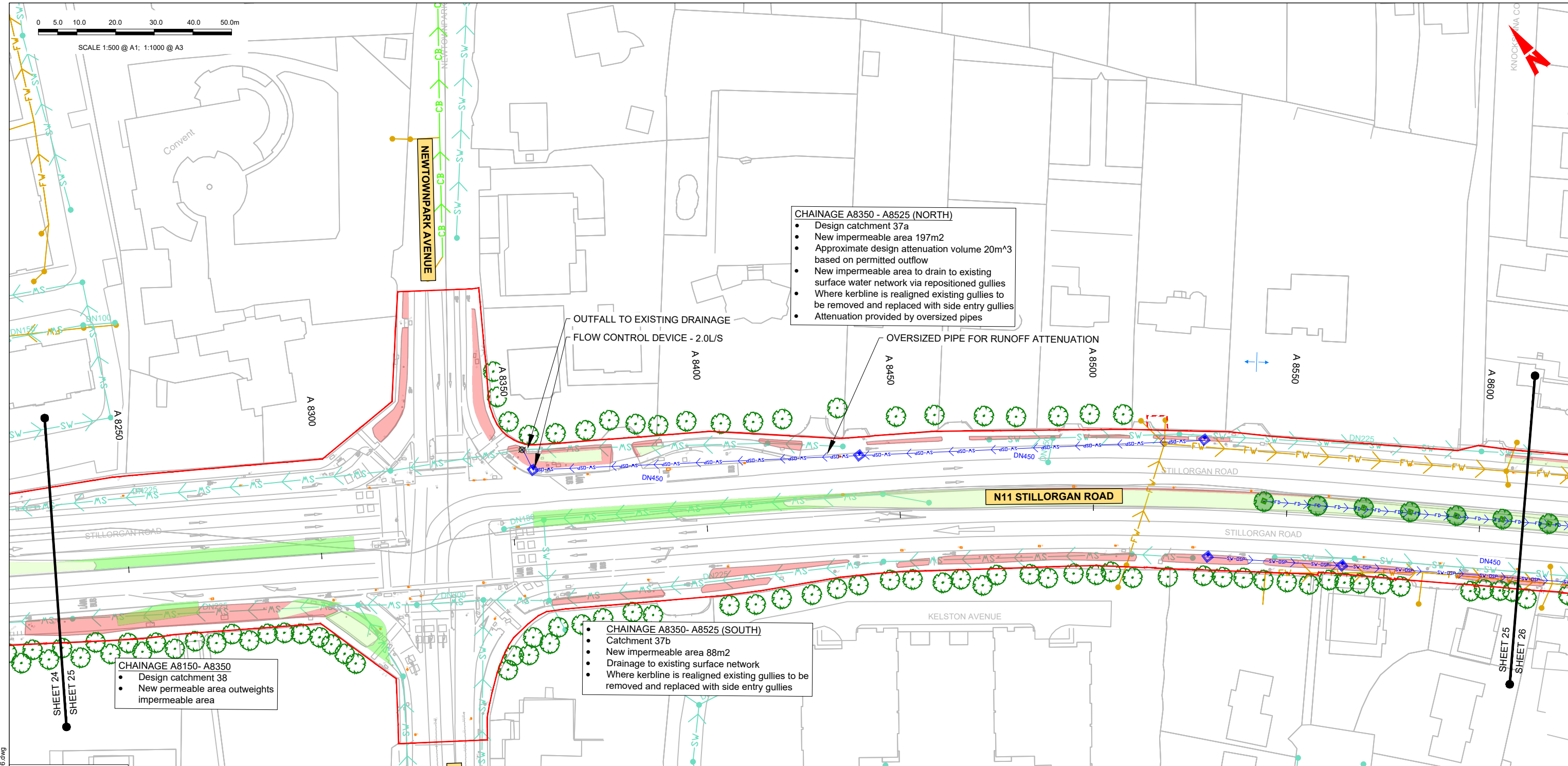
Client: **NTA**  
Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0024	24 of 54	A	M01

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**CHAINAGE A8350 - A8525 (NORTH)**

- Design catchment 37a
- New impermeable area 197m<sup>2</sup>
- Approximate design attenuation volume 20m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A8350- A8525 (SOUTH)**

- Catchment 37b
- New impermeable area 88m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A8150- A8350**

- Design catchment 38
- New permeable area outweighs impermeable area

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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

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

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4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
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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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

Programme Title <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0025	Sheet Number 25 of 54	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

0 5.0 10.0 20.0 30.0 40.0 50.0m

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

**CHAINAGE A8525 - A9200**

- Design catchment 36
- New impermeable area 1344m<sup>2</sup>
- Approximate design attenuation volume 60m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits and oversized pipes

**CHAINAGE A8525 - A9200**

- Design catchment 36
- New impermeable area 1344m<sup>2</sup>
- Approximate design attenuation volume 60m<sup>3</sup> based on permitted outflow
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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                                     |  |  |

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Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

Client		Engineering Designer		
<b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority		<b>Jacobs</b>		
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

Programme Title			
<b>BUSCONNECTS DUBLIN</b> <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0026	26 of 54	A	M01

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**ABBREVIATIONS:**

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

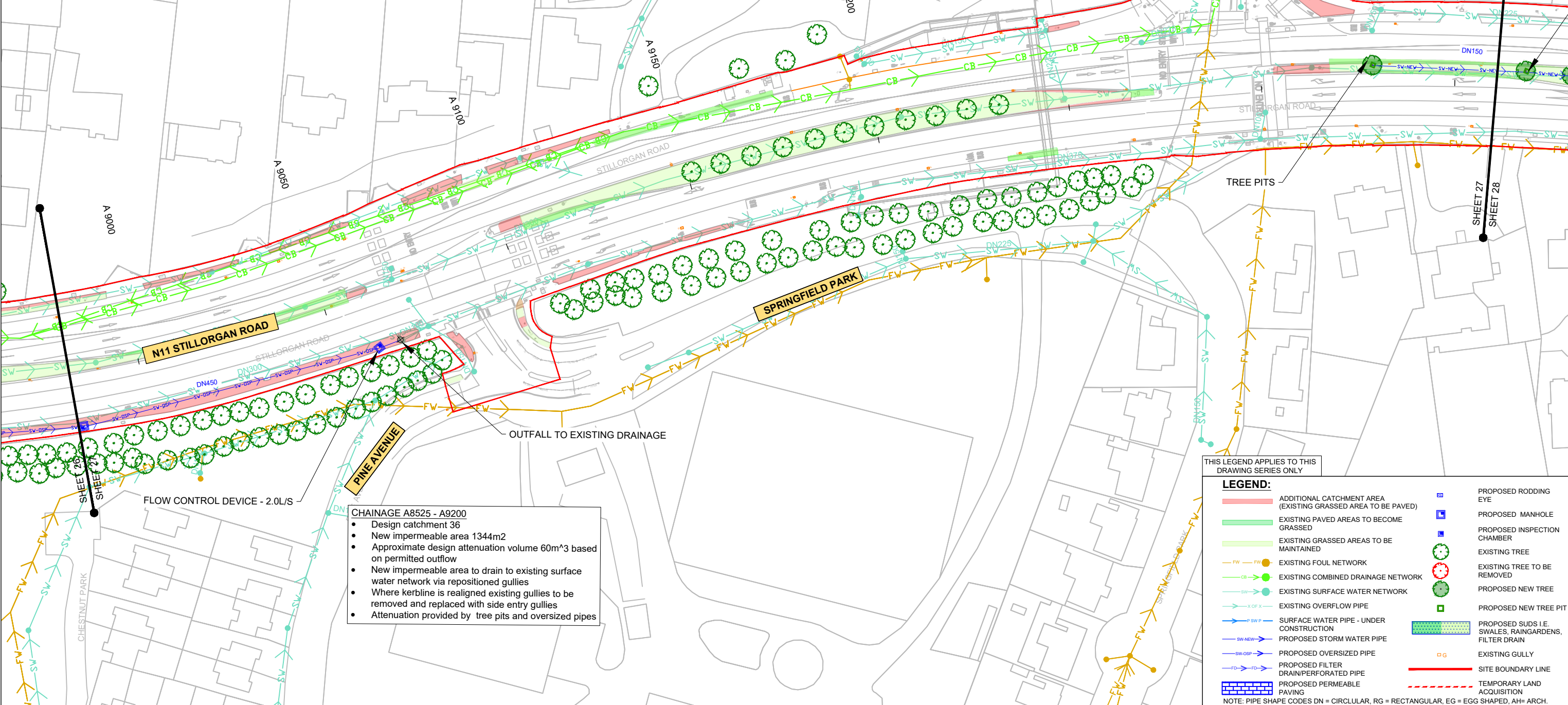
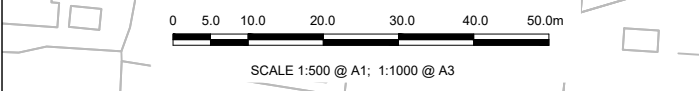


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**ABBREVIATIONS:**

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



**CHAINAGE A9200-A9300**

- Design catchment 35
- New impermeable area 45m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A9300 - A9800**

- Design catchment 34
- New impermeable area 54m<sup>2</sup>
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Design volume of 2m<sup>3</sup> to be provided by tree pits

**CHAINAGE A8525 - A9200**

- Design catchment 36
- New impermeable area 1344m<sup>2</sup>
- Approximate design attenuation volume 60m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits and oversized pipes

**LEGEND:**

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

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0027	27 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

0 5.0 10.0 20.0 30.0 40.0 50.0m

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

CHAINAGE A9300 - A9800

- Design catchment 34
- New impermeable area 54m<sup>2</sup>
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Design volume of 2m<sup>3</sup> to be provided by tree pits

- CHAINAGE A9300 - A9800
- Design catchment 34
- New impermeable area 178m<sup>2</sup>
- Approximate design attenuation volume 8.1m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

- CHAINAGE A9300 - A9800
- Catchment 34
- New impermeable area 91m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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

Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

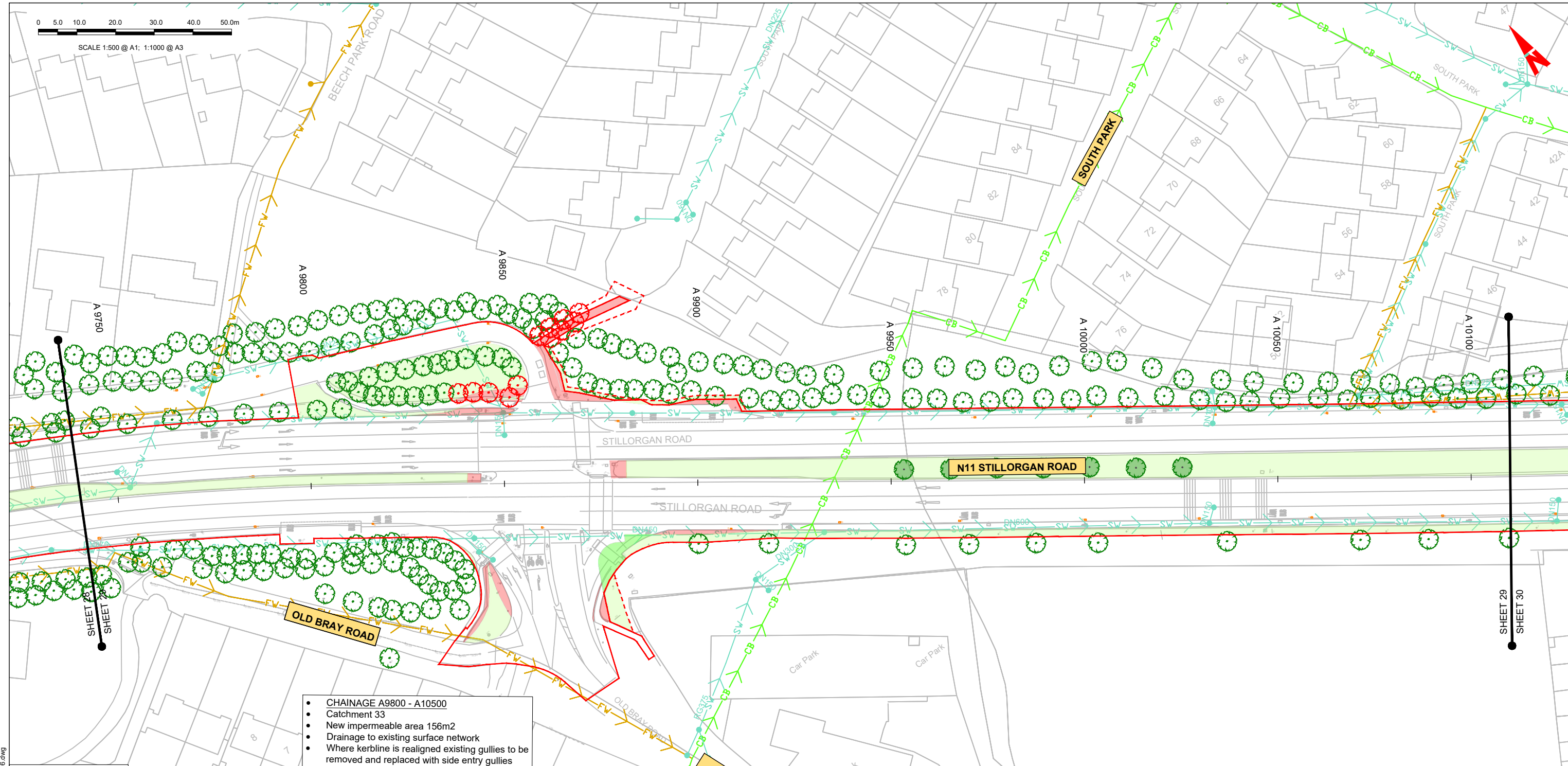
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0028	28 of 54	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 = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

- CHAINAGE A9800 - A10500
- Catchment 33
- New impermeable area 156m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines is realigned existing gullies to be removed and replaced with side entry gullies

**NOTES:**

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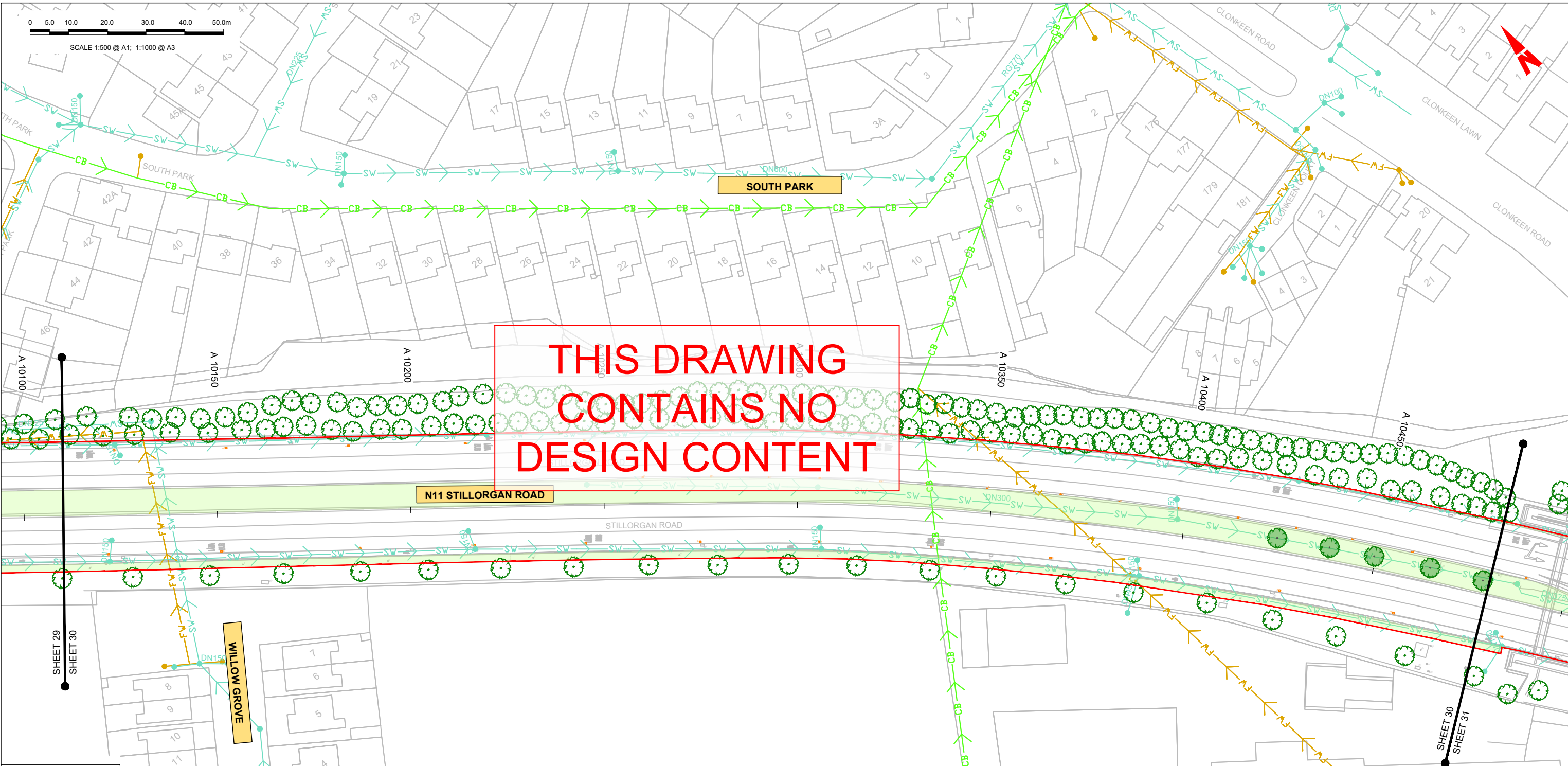
Client: **NTA**  
Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
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Project Code	Originator Code	QMS Code		
BCIDB	JAC			

Programme Title	<b>BUSCONNECTS DUBLIN</b>		
Drawing Title	<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0029	29 of 54	A	M01

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THIS DRAWING  
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DESIGN CONTENT

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**LEGEND:**

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**ABBREVIATIONS:**

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

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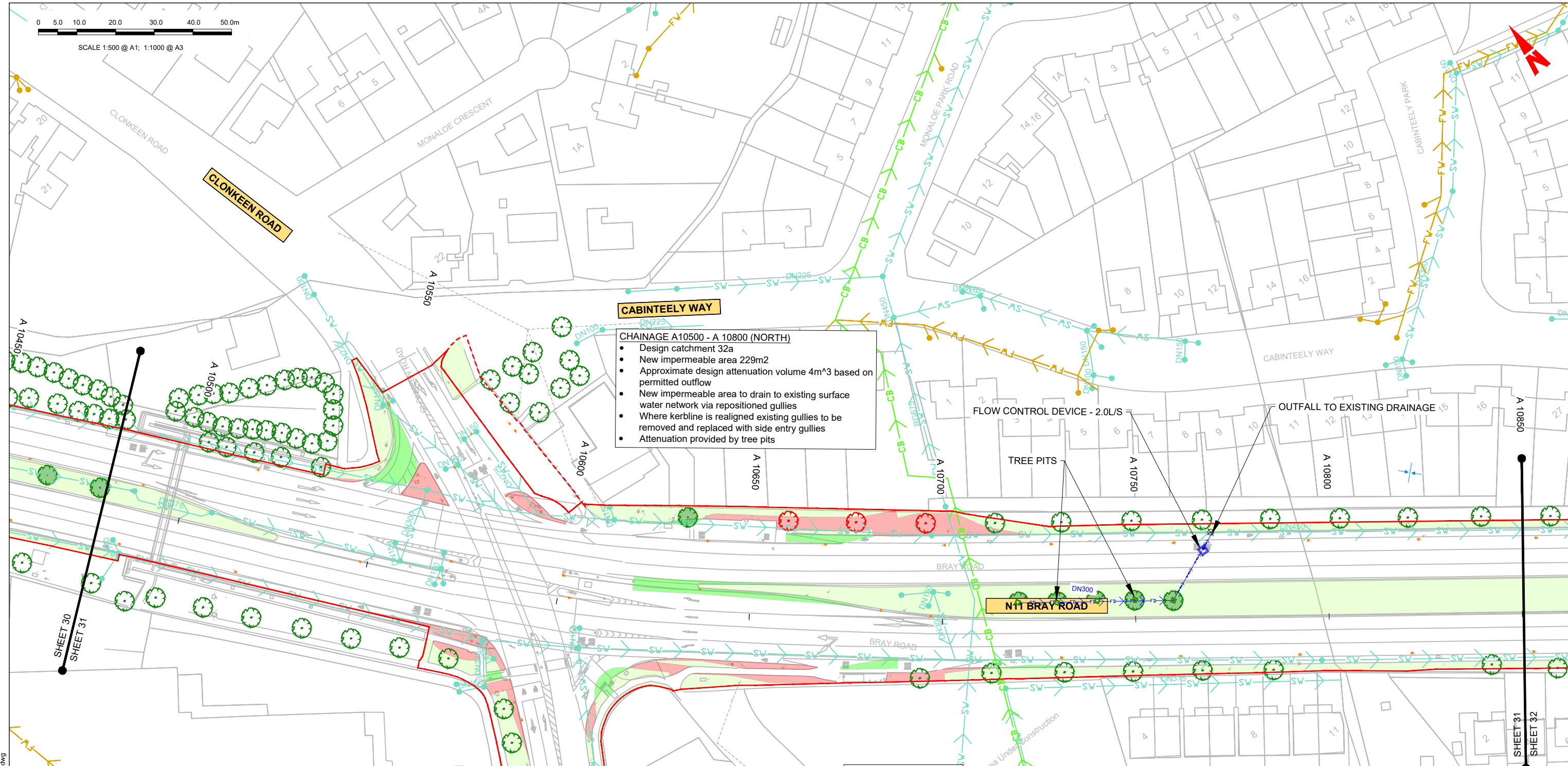
Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | QMS Code: [blank]

Programme Title: <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title: <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b>			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0030	30 of 54	A	M01

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**CHAINAGE A10500 - A 10800 (NORTH)**

- Design catchment 32a
- New impermeable area 229m<sup>2</sup>
- Approximate design attenuation volume 4m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

**CHAINAGE A10500 - A10800 (SOUTH)**

- Design catchment 32b
- New permeable area outweighs impermeable area

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	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
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	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
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- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE  
Vol<sub>att</sub>: VOLUME OF ATTENUATION

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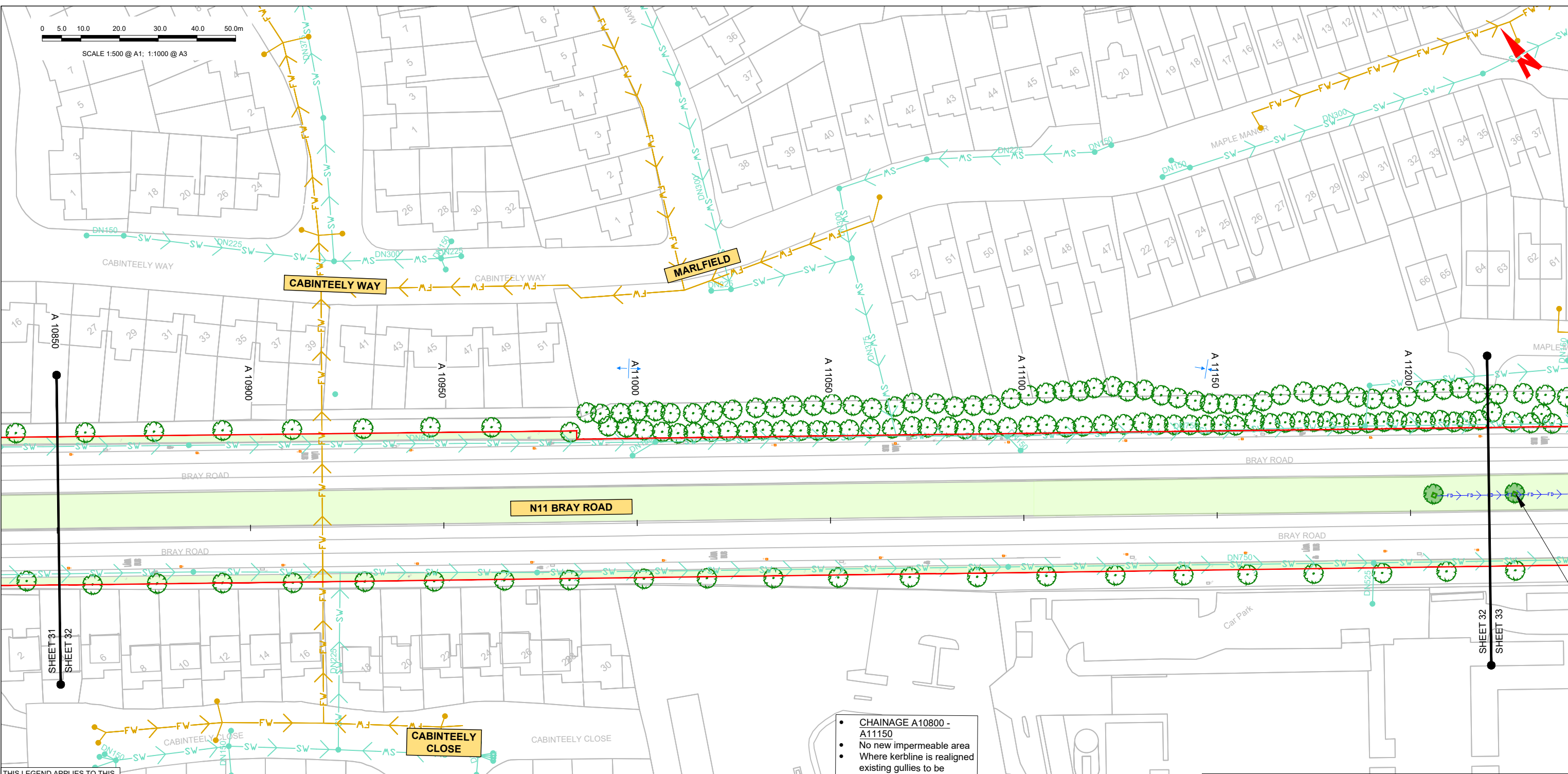
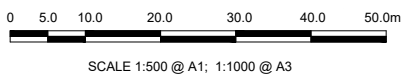
Client: **NTA**  
Údarás Náisiúnta Iompair  
National Transport Authority

Engineering Designer: **Jacobs**

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Programme Title			
<b>BUSCONNECTS DUBLIN</b>			
<b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title			
BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0031	31 of 54	A	M01

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• CHAINAGE A10800 - A11150  
 • No new impermeable area  
 • Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

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

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**PROPOSED SURFACE WATER DRAINAGE WORKS**

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0032	32 of 54	A	M01

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

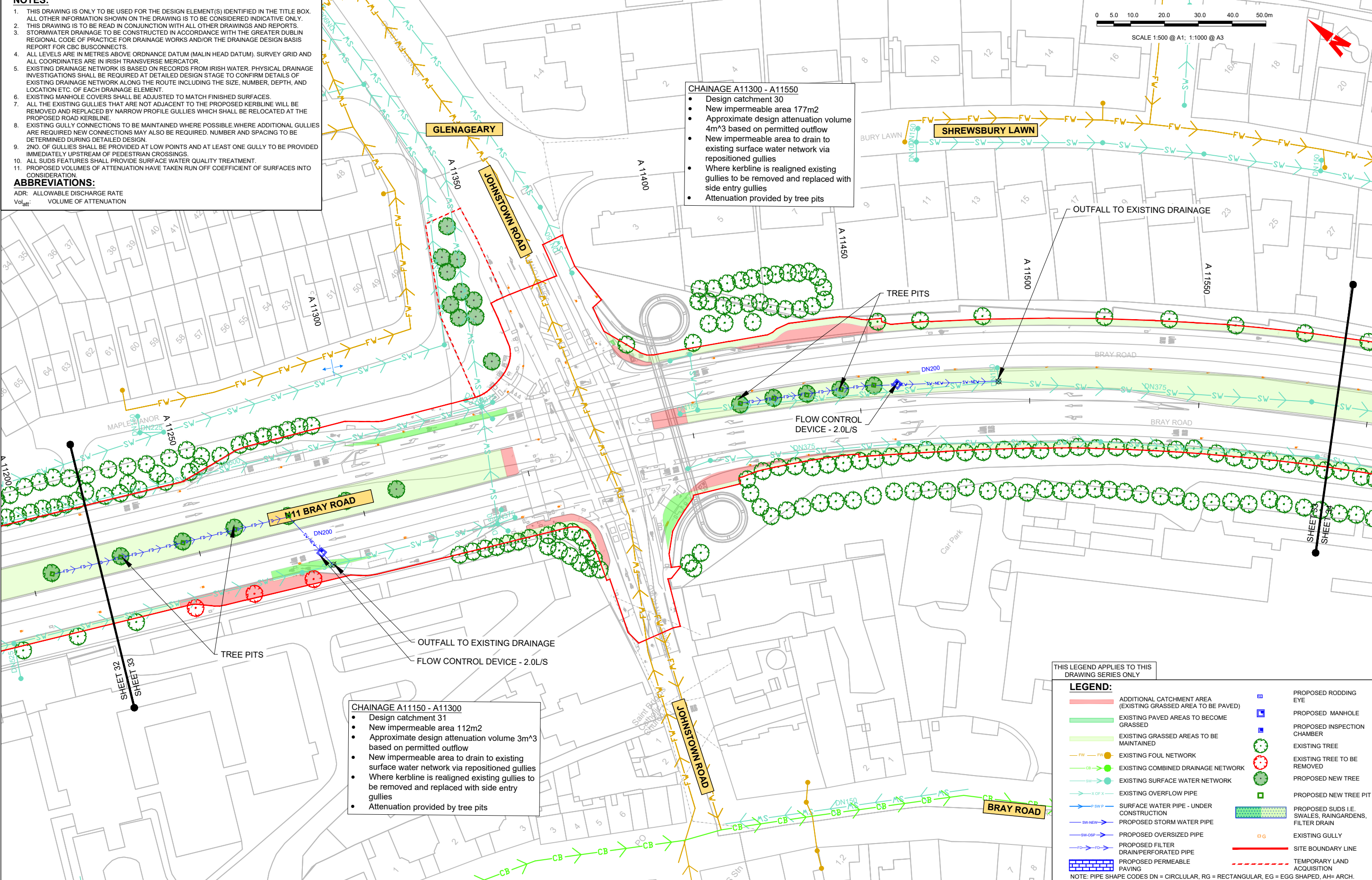


**CHAINAGE A11300 - A11550**

- Design catchment 30
- New impermeable area 177m<sup>2</sup>
- Approximate design attenuation volume 4m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

**CHAINAGE A11150 - A11300**

- Design catchment 31
- New impermeable area 112m<sup>2</sup>
- Approximate design attenuation volume 3m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits



THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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		PROPOSED FILTER DRAIN/PERFORATED PIPE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		PROPOSED PERMEABLE PAVING

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Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0033	33 of 54	A	M01

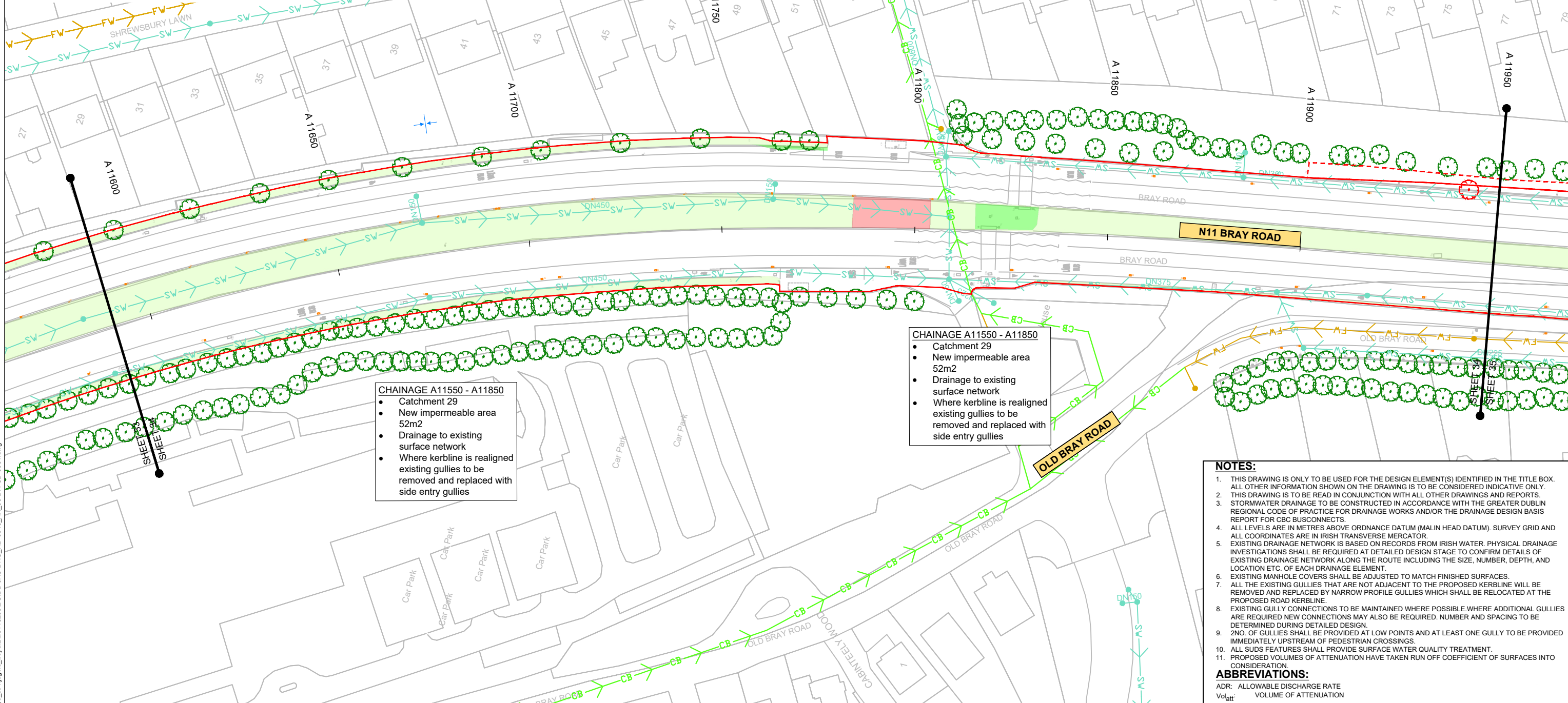
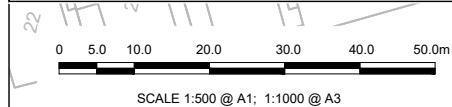
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	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED 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.



**CHAINAGE A11550 - A11850**

- Catchment 29
- New impermeable area 52m2
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A11550 - A11850**

- Catchment 29
- New impermeable area 52m2
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

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**ABBREVIATIONS:**

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

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Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023  
Scale: 1:500 @ A1  
1:1000 @ A3

Project Code: BCIDB  
Originator Code: JAC

Drawn: BD  
Checked: NS  
Approved: RS

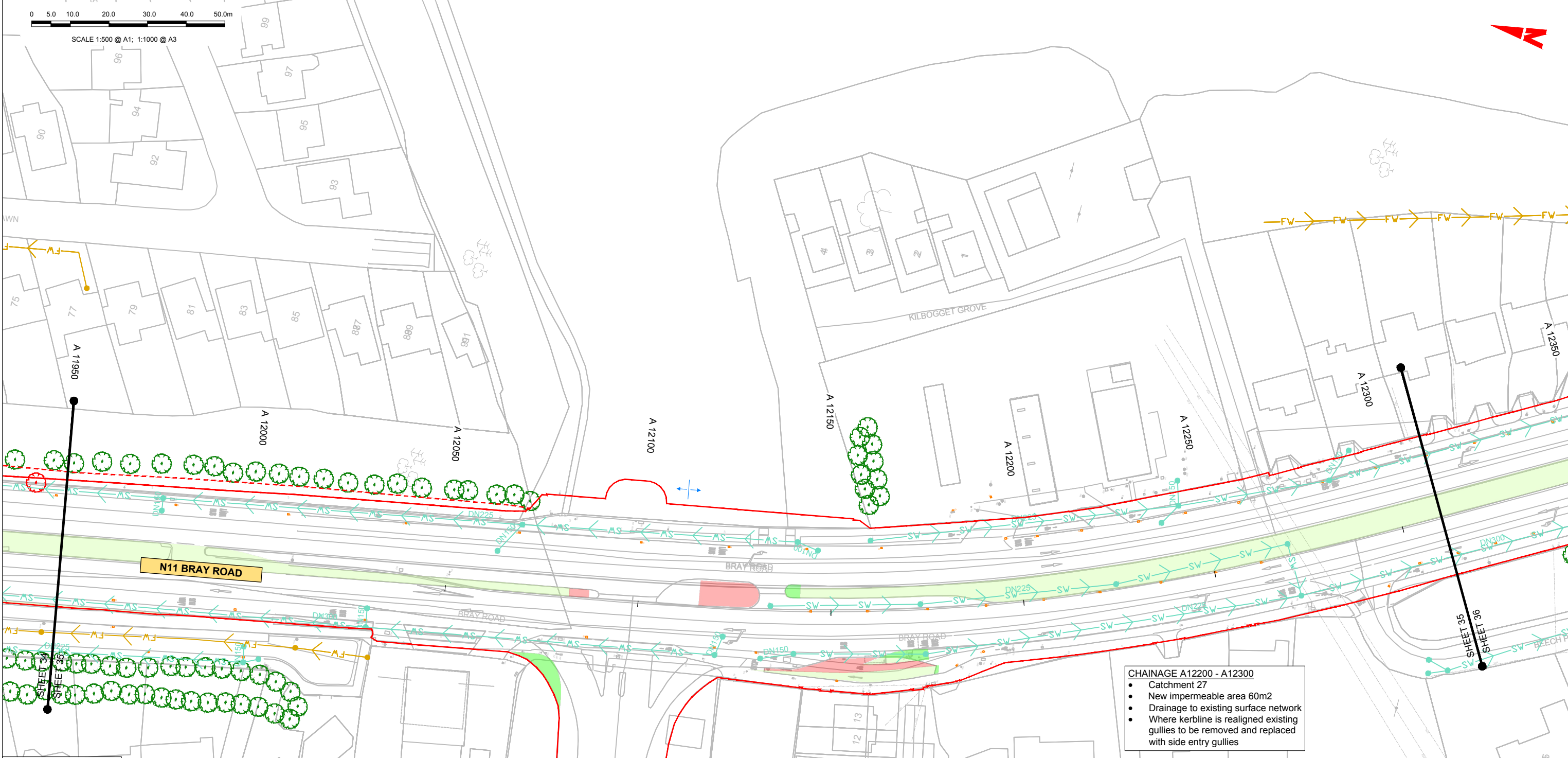
Programme Title: **BUSCONNECTS DUBLIN**  
**CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

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

Drawing File Name: BCIDB-JAC-DNG\_RD-0013\_XX\_00-DR-CD-0034  
Sheet Number: 34 of 54  
Status: A  
Rev: M01

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**CHAINAGE A12200 - A12300**

- Catchment 27
- New impermeable area 60m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A11850 - A12200**

- Catchment 28
- New impermeable area 136m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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	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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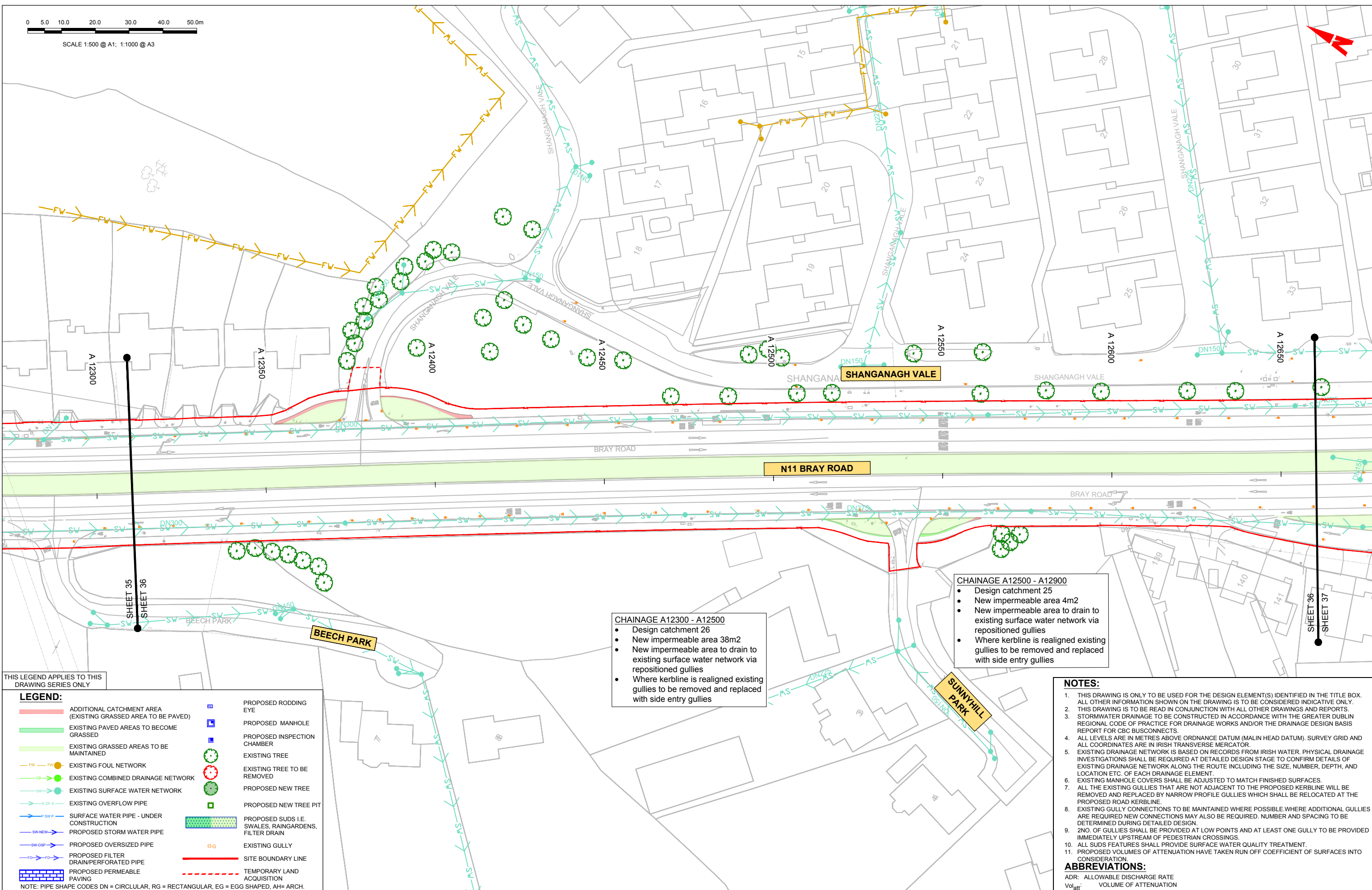
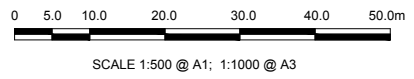
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6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
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<p>Project Ireland 2040 Building Ireland's Future</p>					<p>Issue for Phase 4: Planning</p>		<p>Date 08/05/2023</p> <p>Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Drawn BD</p> <p>Checked NS</p> <p>Approved RS</p>			<p>Drawing Title</p> <p>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>				
							<p>Project Code BCIDB</p> <p>Originator Code JAC</p>		<p>Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0035</p>			<p>Sheet Number 35 of 54</p> <p>Status A</p> <p>Rev M01</p>				

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**CHAINAGE A12300 - A12500**

- Design catchment 26
- New impermeable area 38m2
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A12500 - A12900**

- Design catchment 25
- New impermeable area 4m2
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

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

Rev	Date	Drn	Chkd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023 | Scale: 1:500 @ A1, 1:1000 @ A3 | Drawn: BD | Checked: NS | Approved: RS

Project Code: BCIDB | Originator Code: JAC | QMS Code:

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

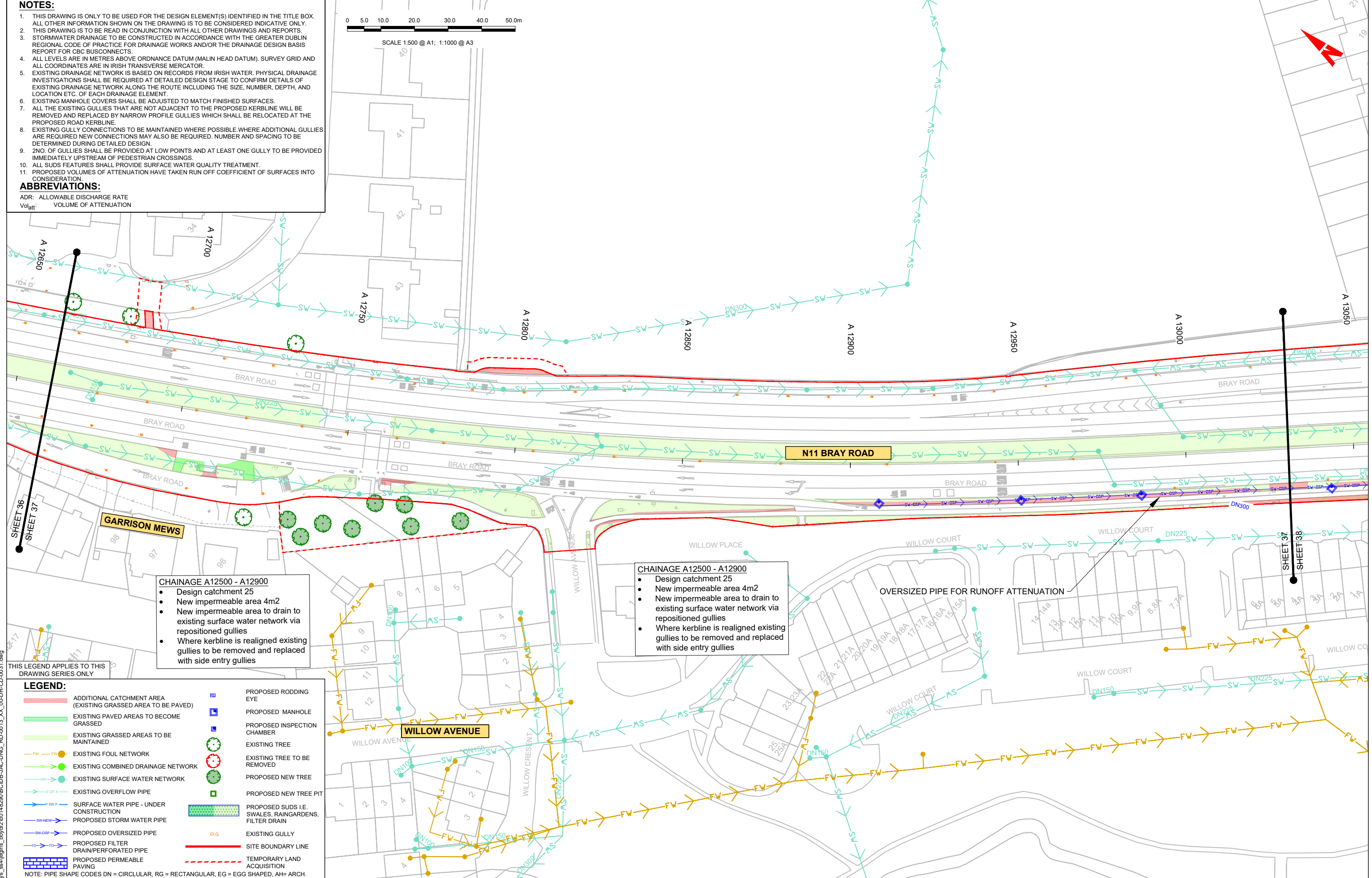
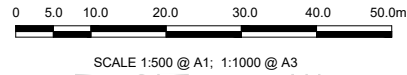
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME  
PROPOSED SURFACE WATER DRAINAGE WORKS

Drawing File Name: BCIDB-JAC-DNG\_RD-0013\_XX\_00-DR-CD-0036 | Sheet Number: 36 of 54 | Status: A | Rev: M01

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



**CHAINAGE A12500 - A12900**

- Design catchment 25
- New impermeable area 4m2
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A12500 - A12900**

- Design catchment 25
- New impermeable area 4m2
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

OVERSIZED PIPE FOR RUNOFF ATTENUATION

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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

Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

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

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

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code: | Sheet Number: 37 of 54 | Status: A | Rev: M01

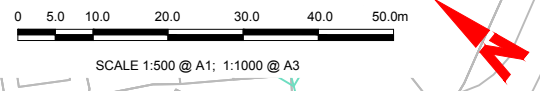
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THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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

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



**CHAINAGE A13200 - A13450**

- Design catchment 23
- New impermeable area 247m<sup>2</sup>
- Approximate design attenuation volume 6m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A12900 - A13200**

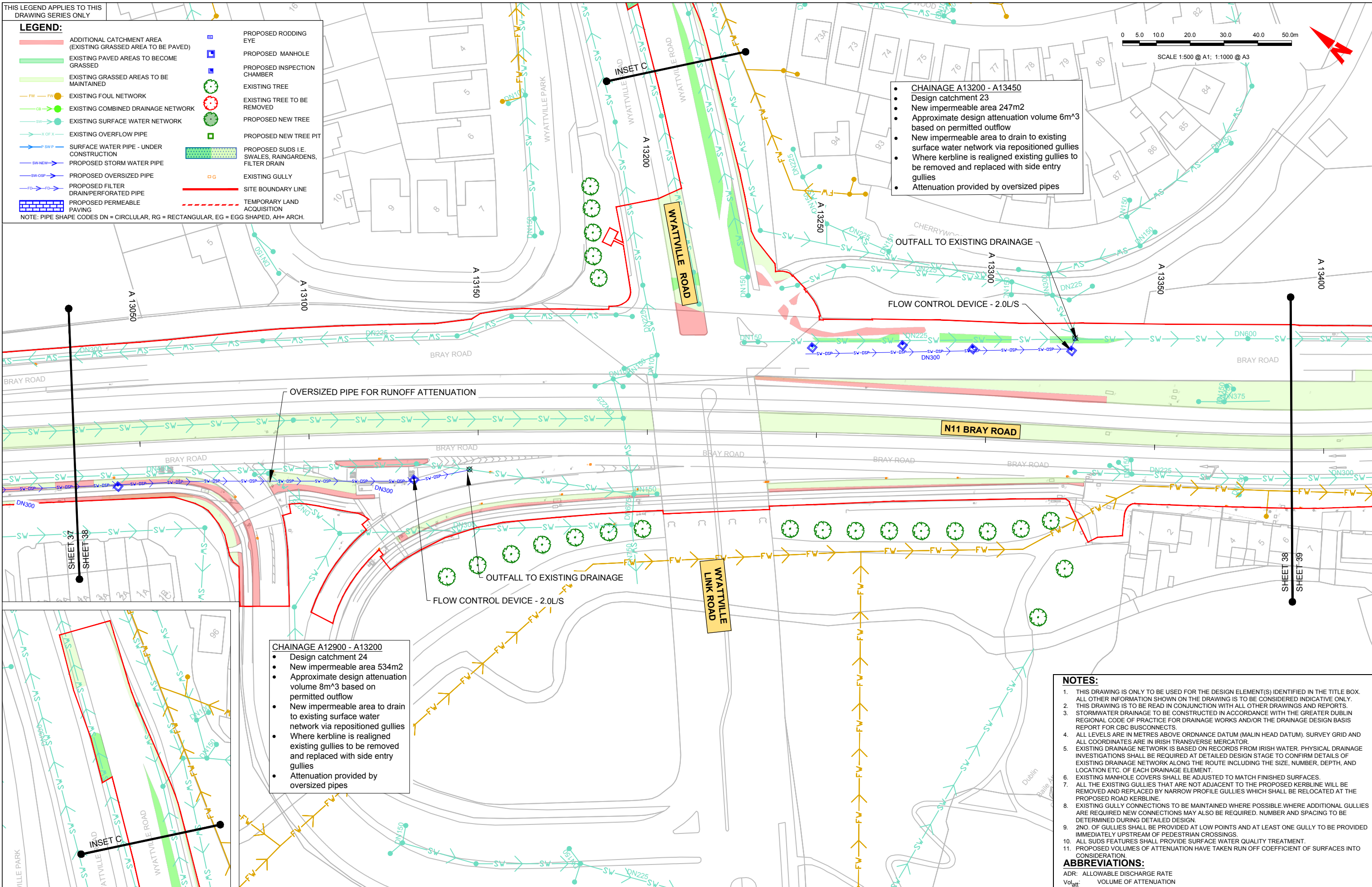
- Design catchment 24
- New impermeable area 534m<sup>2</sup>
- Approximate design attenuation volume 8m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

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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.

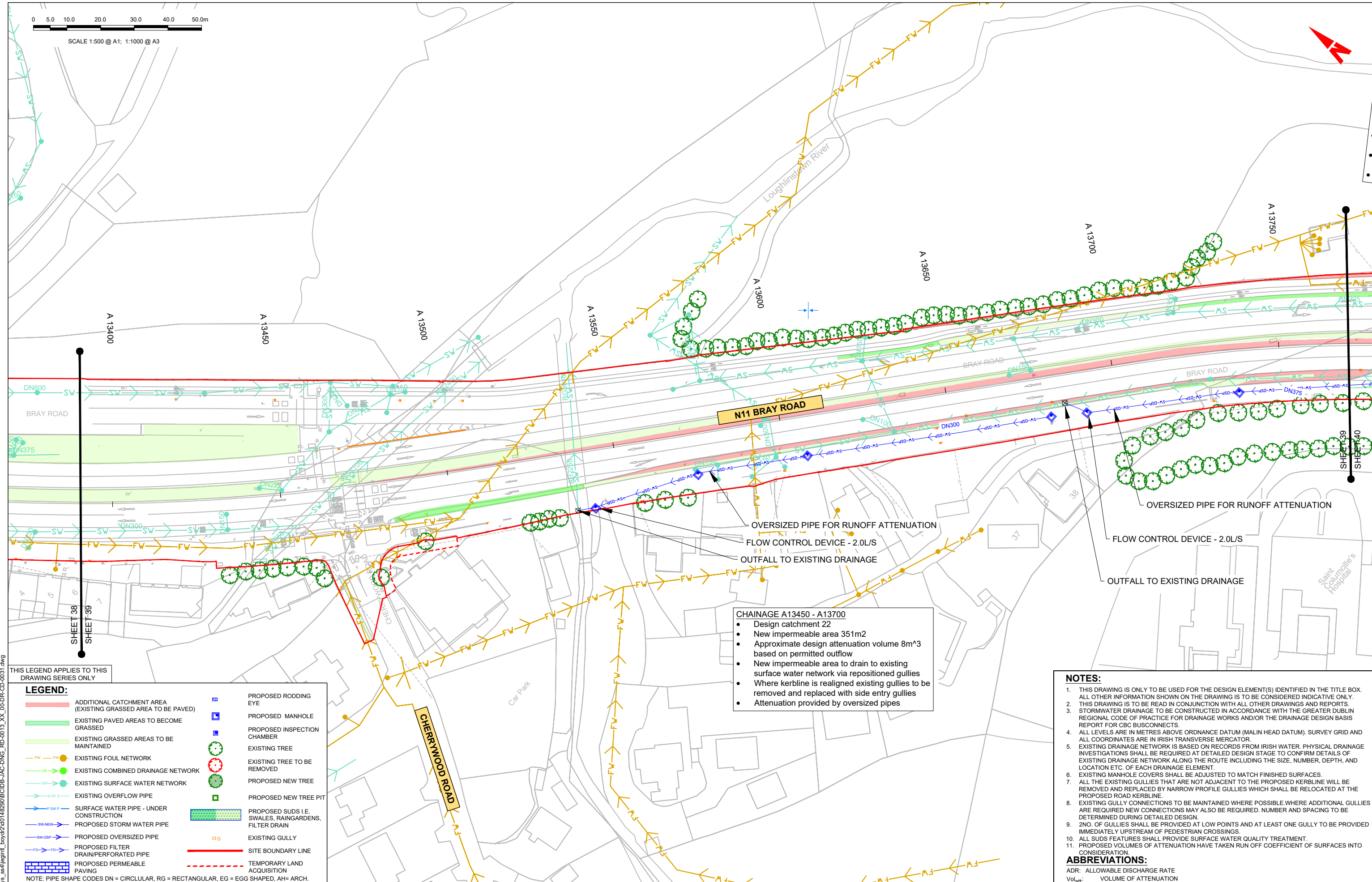
**ABBREVIATIONS:**

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



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

**CHAINAGE A13450 - A13700**

- Design catchment 22
- New impermeable area 351m<sup>2</sup>
- Approximate design attenuation volume 8m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

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**ABBREVIATIONS:**

ADR: ALLOWABLE DISCHARGE RATE  
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**Project Ireland 2040**  
Building Ireland's Future

Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0039	39 of 54	A	M01

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**ABBREVIATIONS:**

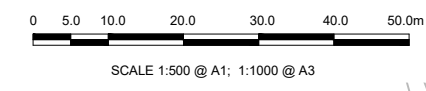
ADR: ALLOWABLE DISCHARGE RATE  
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THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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 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		TEMPORARY LAND ACQUISITION
	PROPOSED FILTER DRAIN/PERFORATED PIPE		SITE BOUNDARY LINE
	PROPOSED PERMEABLE PAVING		

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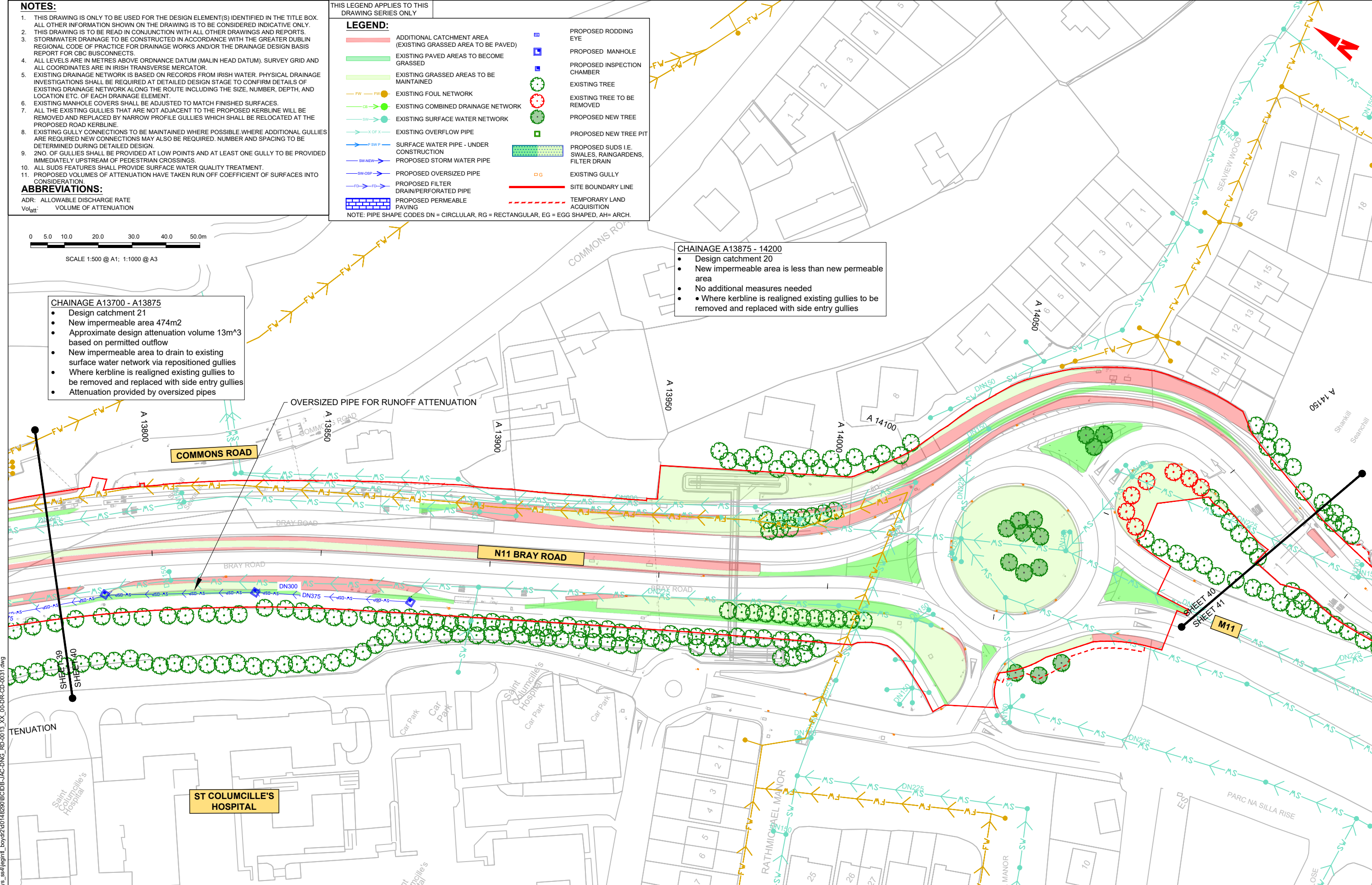
**CHAINAGE A13700 - A13875**

- Design catchment 21
- New impermeable area 474m<sup>2</sup>
- Approximate design attenuation volume 13m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A13875 - 14200**

- Design catchment 20
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

OVERSIZED PIPE FOR RUNOFF ATTENUATION



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Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code:

Programme Title: <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title: <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0040	Sheet Number: 40 of 54	Status: A	Rev: M01

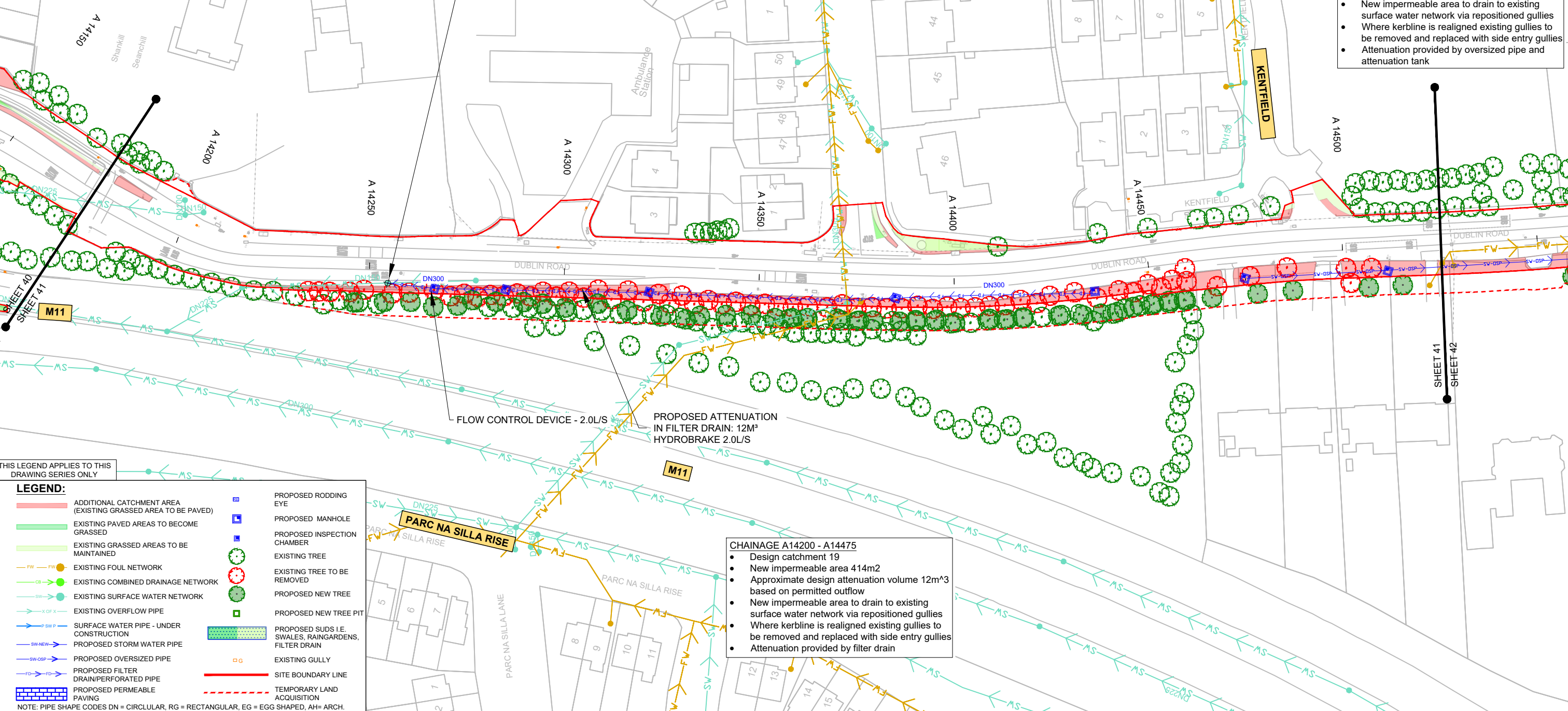
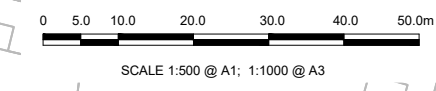
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5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION 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.
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



**CHAINAGE A14475 - A14700**

- Design catchment 18
- New impermeable area 718m<sup>2</sup>
- Approximate design attenuation volume 25m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipe and attenuation tank

**THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY**

**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.

**CHAINAGE A14200 - A14475**

- Design catchment 19
- New impermeable area 414m<sup>2</sup>
- Approximate design attenuation volume 12m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by filter drain

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Rev	Date	Dm	Chk'd	App'd	Description														
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<p>Date: 08/05/2023 Scale: 1:500 @ A1 1:1000 @ A3</p> <p>Project Code: BCIDB Originator Code: JAC</p> <p>Drawn: BD Checked: NS Approved: RS</p> <p>OMS Code</p>						<p>Drawing Title</p> <p>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>													
<p>Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0041</p>						<p>Sheet Number: 41 of 54</p> <p>Status: A</p> <p>Rev: M01</p>													

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**ABBREVIATIONS:**

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

**CHAINAGE A14475 - A14700**

- Design catchment 18
- New impermeable area 718m<sup>2</sup>
- Approximate design attenuation volume 25m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipe and attenuation tank

**CHAINAGE A14700 - A15100**

- Design catchment 16
- New impermeable area 596m<sup>2</sup>
- Approximate design attenuation volume 14m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

PROPOSED ATTENUATION IN OVERSIZED PIPE, PROPOSED ATTENUATION TANK: 11M<sup>3</sup> Area: 22m<sup>2</sup> HYDROBRAKE 2.0L/S  
WOODBANK  
FLOW CONTROL DEVICE - 2.0L/S  
OUTFALL TO EXISTING DRAINAGE

OUTFALL TO EXISTING DRAINAGE  
FLOW CONTROL DEVICE - 2.0L/S

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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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Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

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Rev	Date	Drn	Chkd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

Date	Scale	Drawn	Checked
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS
Project Code	Originator Code	QMS Code	Approved
BCIDB	JAC		RS

<b>Client</b> Client: <b>NTA</b> Údarás Náisiúnta Iompair National Transport Authority				<b>Engineering Designer</b> Engineering Designer: <b>Jacobs</b>			
<b>Programme Title</b> BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS				<b>Drawing Title</b> BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0042		Sheet Number 42 of 54		Status A		Rev M01	

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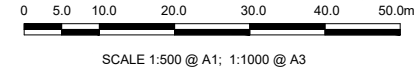
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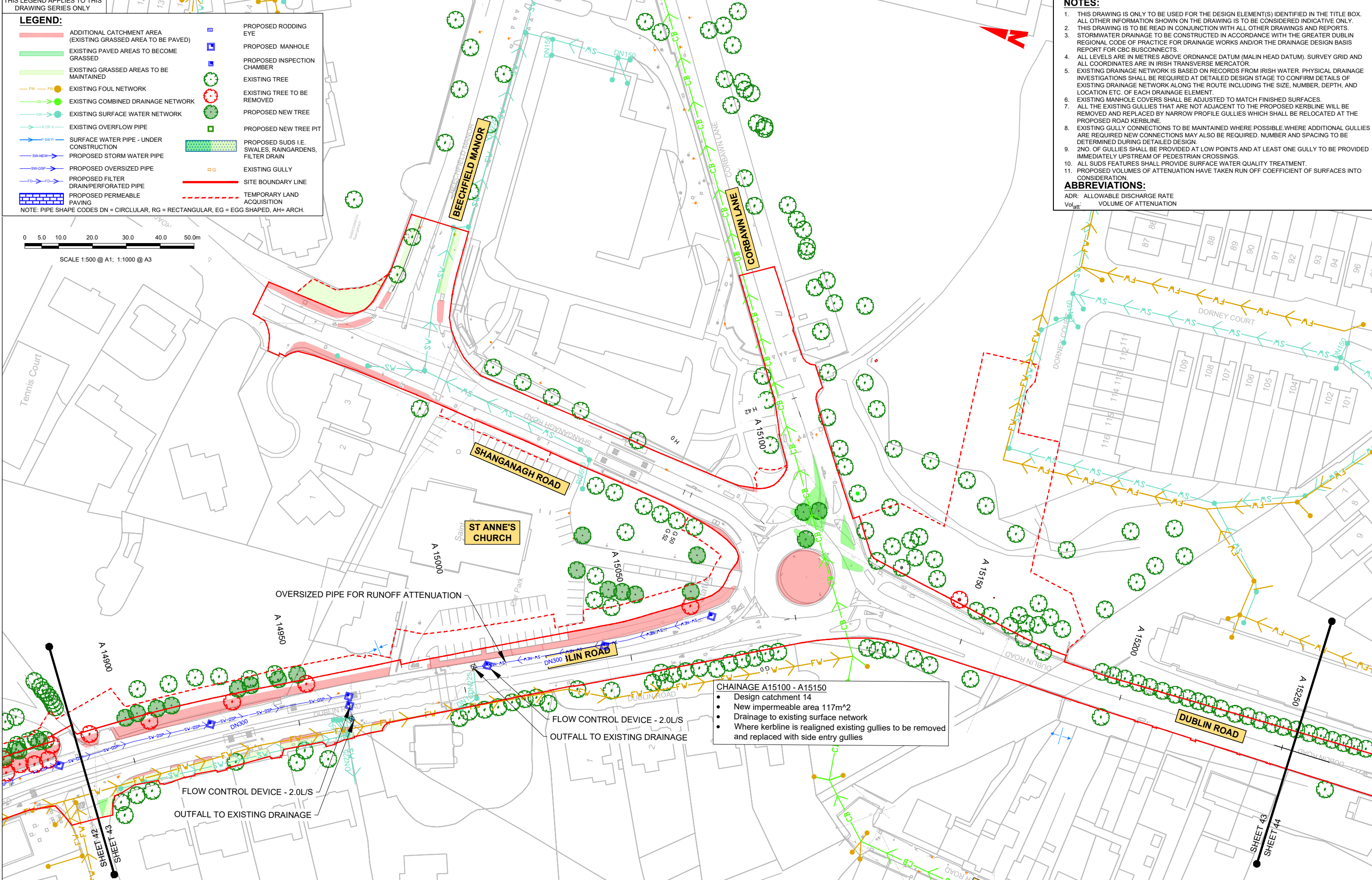
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- LEGEND:**
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  - EXISTING PAVED AREAS TO BECOME GRASSED
  - EXISTING GRASSED AREAS TO BE MAINTAINED
  - EXISTING FOUL NETWORK
  - EXISTING COMBINED DRAINAGE NETWORK
  - EXISTING SURFACE WATER NETWORK
  - EXISTING OVERFLOW PIPE
  - SURFACE WATER PIPE - UNDER CONSTRUCTION
  - PROPOSED STORM WATER PIPE
  - PROPOSED OVERSIZED PIPE
  - PROPOSED FILTER DRAIN/PERFORATED PIPE
  - PROPOSED PERMEABLE PAVING
  - PROPOSED RODDING EYE
  - PROPOSED MANHOLE
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- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE  
Vol<sub>att</sub>: VOLUME OF ATTENUATION



**CHAINAGE A15100 - A15150**

- Design catchment 14
- New impermeable area 117m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

OVERSIZED PIPE FOR RUNOFF ATTENUATION

FLOW CONTROL DEVICE - 2.0L/S  
OUTFALL TO EXISTING DRAINAGE

FLOW CONTROL DEVICE - 2.0L/S  
OUTFALL TO EXISTING DRAINAGE

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M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

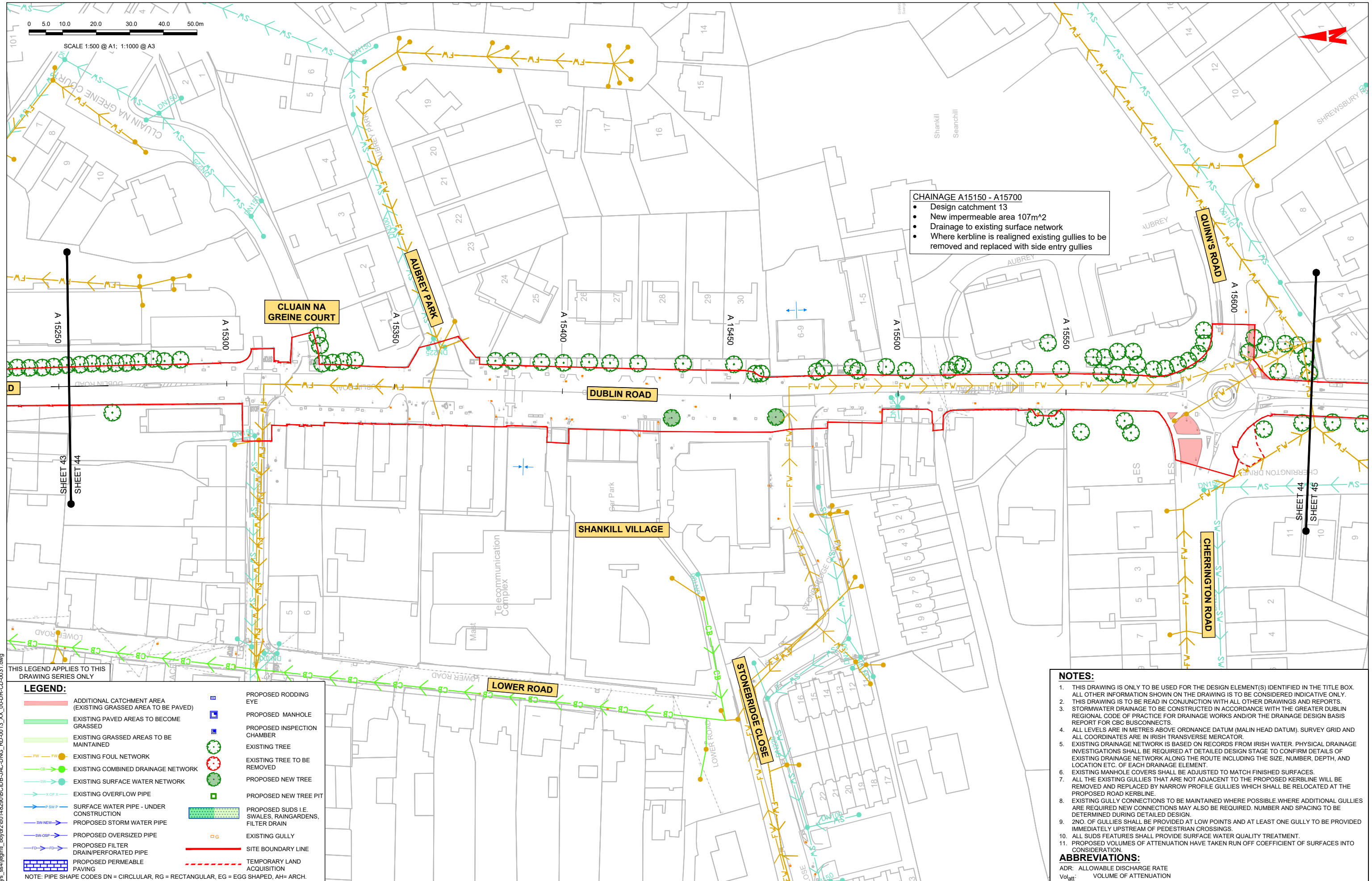
Date: 08/05/2023  
Scale: 1:500 @ A1  
1:1000 @ A3

Project Code: BCIDB  
Originator Code: JAC

Drawn: BD  
Checked: NS  
Approved: RS

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
Drawing Title: <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0043			
Sheet Number: 43 of 54	Status: A	Rev: M01	

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**CHAINAGE A15150 - A15700**

- Design catchment 13
- New impermeable area 107m<sup>2</sup>
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

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	EXISTING PAVED AREAS TO BECOME GRASSED
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	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
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**ABBREVIATIONS:**

ADR: ALLOWABLE DISCHARGE RATE  
Volatt: VOLUME OF ATTENUATION

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

Engineering Designer: **Jacobs**

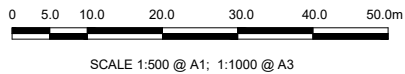
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

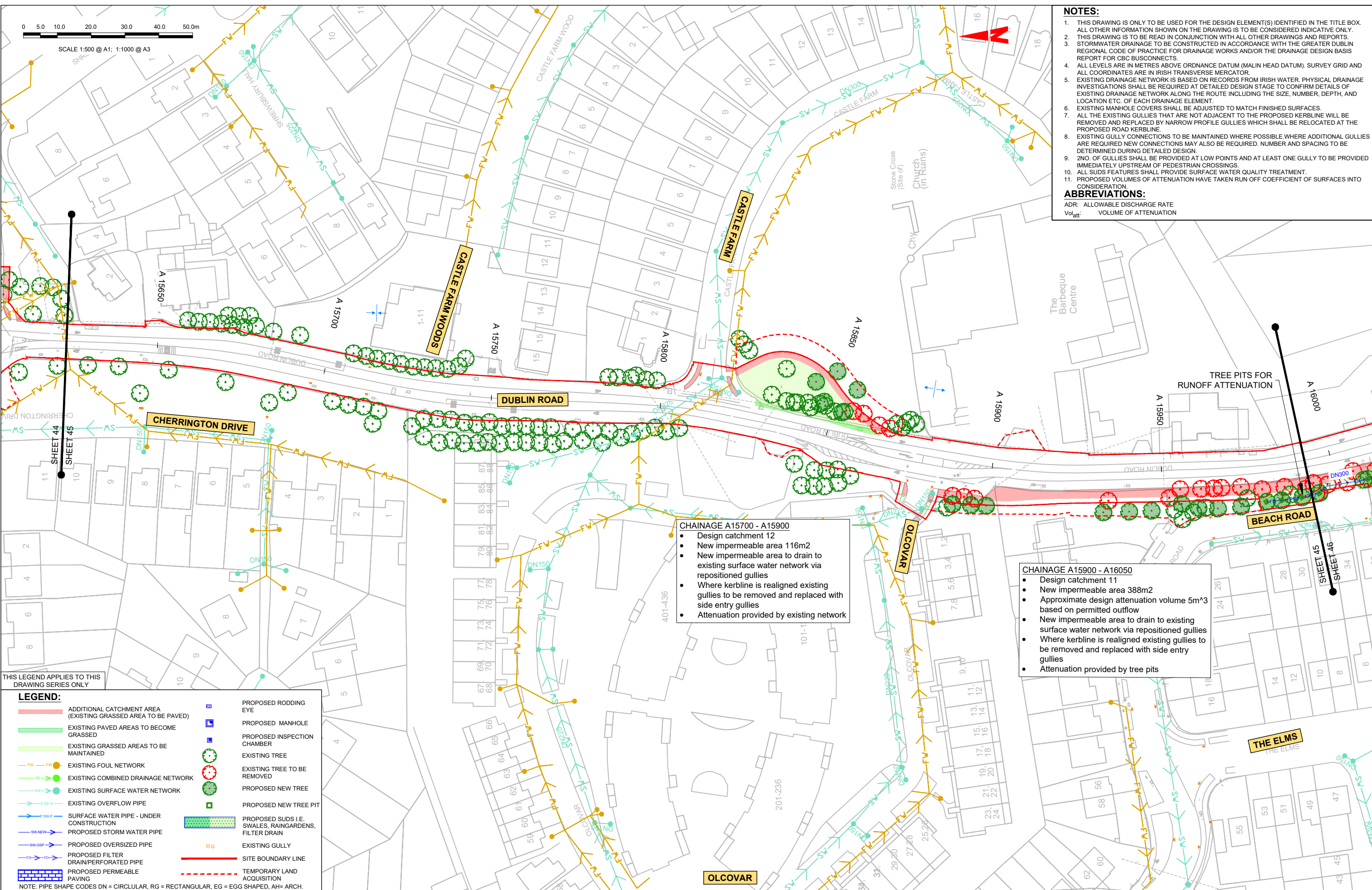
Drawing Title: **BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME**  
**PROPOSED SURFACE WATER DRAINAGE WORKS**

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0044	44 of 54	A	M01

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



**CHAINAGE A15700 - A15900**

- Design catchment 12
- New impermeable area 116m<sup>2</sup>
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by existing network

**CHAINAGE A15900 - A16050**

- Design catchment 11
- New impermeable area 388m<sup>2</sup>
- Approximate design attenuation volume 5m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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 PAVING
	PROPOSED PERMEABLE PAVING		

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

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

Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
Drawing Title: <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0045			
Sheet Number: 45 of 54	Status: A	Rev: M01	

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

- CHAINAGE A16050 - A16475**
- Design catchment 10
  - New impermeable area 2717m<sup>2</sup>
  - Approximate design attenuation volume 120m<sup>3</sup> based on permitted outflow
  - New impermeable area to drain to existing surface water network via repositioned gullies
  - Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
  - Attenuation provided by oversized pipes and filter drains

- CHAINAGE A15900 - A16050**
- Design catchment 11
  - New impermeable area 388m<sup>2</sup>
  - Approximate design attenuation volume 5m<sup>3</sup> based on permitted outflow
  - New impermeable area to drain to existing surface water network via repositioned gullies
  - Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
  - Attenuation provided by tree pits

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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		

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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0046	46 of 54	A	M01

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

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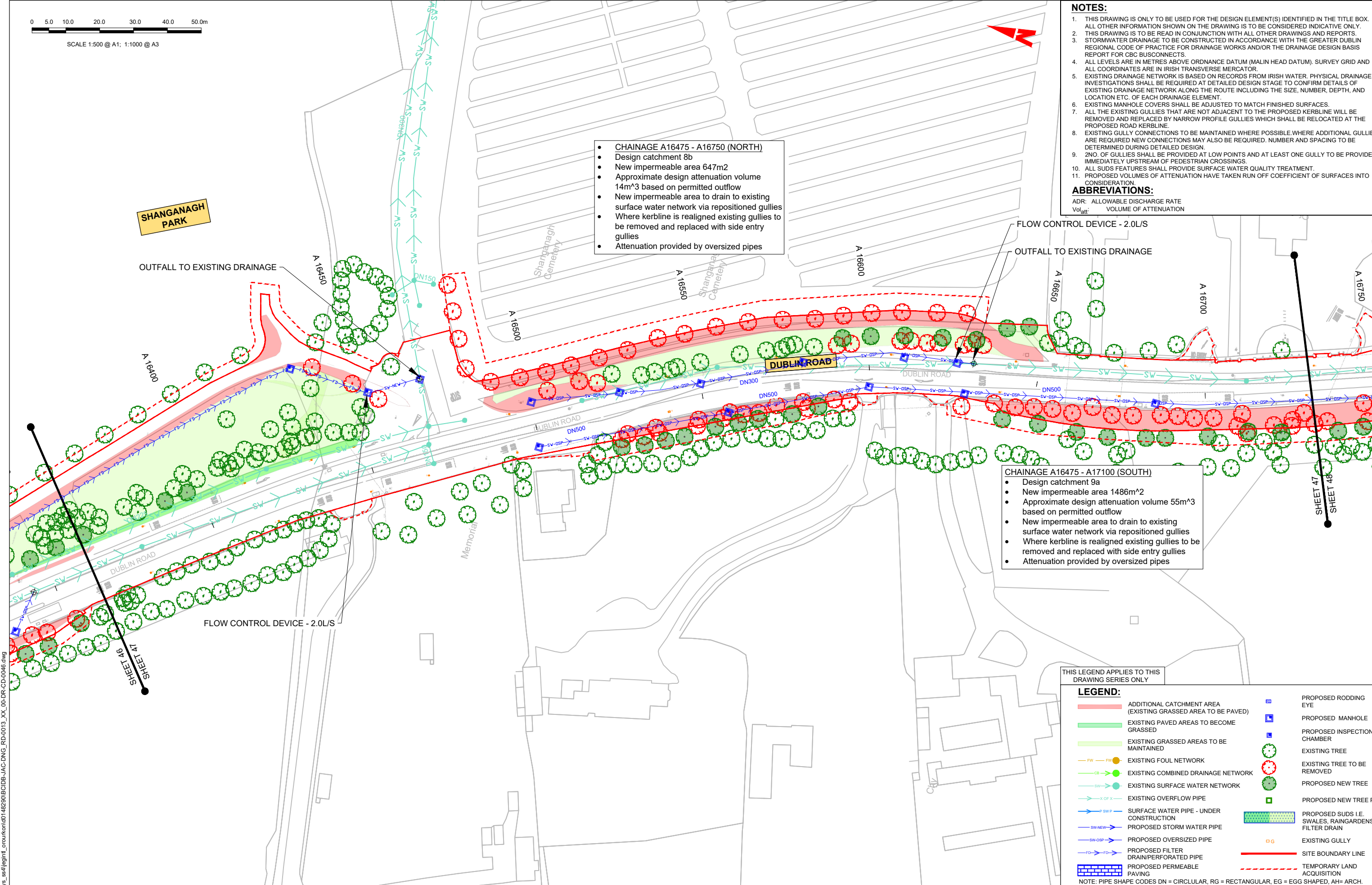


SCALE 1:500 @ A1; 1:1000 @ A3

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

- CHAINAGE A16475 - A16750 (NORTH)**
- Design catchment 8b
  - New impermeable area 647m<sup>2</sup>
  - Approximate design attenuation volume 14m<sup>3</sup> based on permitted outflow
  - New impermeable area to drain to existing surface water network via repositioned gullies
  - Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
  - Attenuation provided by oversized pipes

- CHAINAGE A16475 - A17100 (SOUTH)**
- Design catchment 9a
  - New impermeable area 1486m<sup>2</sup>
  - Approximate design attenuation volume 55m<sup>3</sup> based on permitted outflow
  - New impermeable area to drain to existing surface water network via repositioned gullies
  - Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
  - Attenuation provided by oversized pipes



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

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

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

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

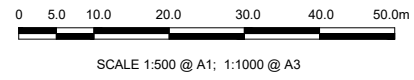
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0047	47 of 54	A	M01

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



**CHAINAGE A16750- A17100 (NORTH)**

- Design catchment 8a
- New impermeable area 2332m<sup>2</sup>
- Approximate design attenuation volume 110m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

PROPOSED ATTENUATION IN OVERSIZED PIPES: 105M<sup>3</sup> HYDROBRAKE 2.0L/S

PROPOSED ATTENUATION IN OVERSIZED PIPES: 110M<sup>3</sup> HYDROBRAKE 2.0L/S

**CHAINAGE A16475 - A17100 (SOUTH)**

- Design catchment 9a
- New impermeable area 1486m<sup>2</sup>
- Approximate design attenuation volume 55m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

**CHAINAGE A17100- A17200**

- Design catchment 7
- New impermeable area 183m<sup>2</sup>
- Approximate design attenuation volume 5m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE
	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
	SURFACE WATER PIPE - UNDER CONSTRUCTION		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
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Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023 Scale: 1:500 @ A1, 1:1000 @ A3

Project Code: BCIDB Originator Code: JAC

Drawn: BD Checked: NS Approved: RS

Programme Title: <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing Title: <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b>			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0048	Sheet Number: 48 of 54	Status: A	Rev: M01

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

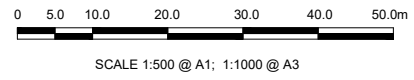
**ABBREVIATIONS:**  
 ADR: ALLOWABLE DISCHARGE RATE  
 Vol<sub>att</sub>: VOLUME OF ATTENUATION

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

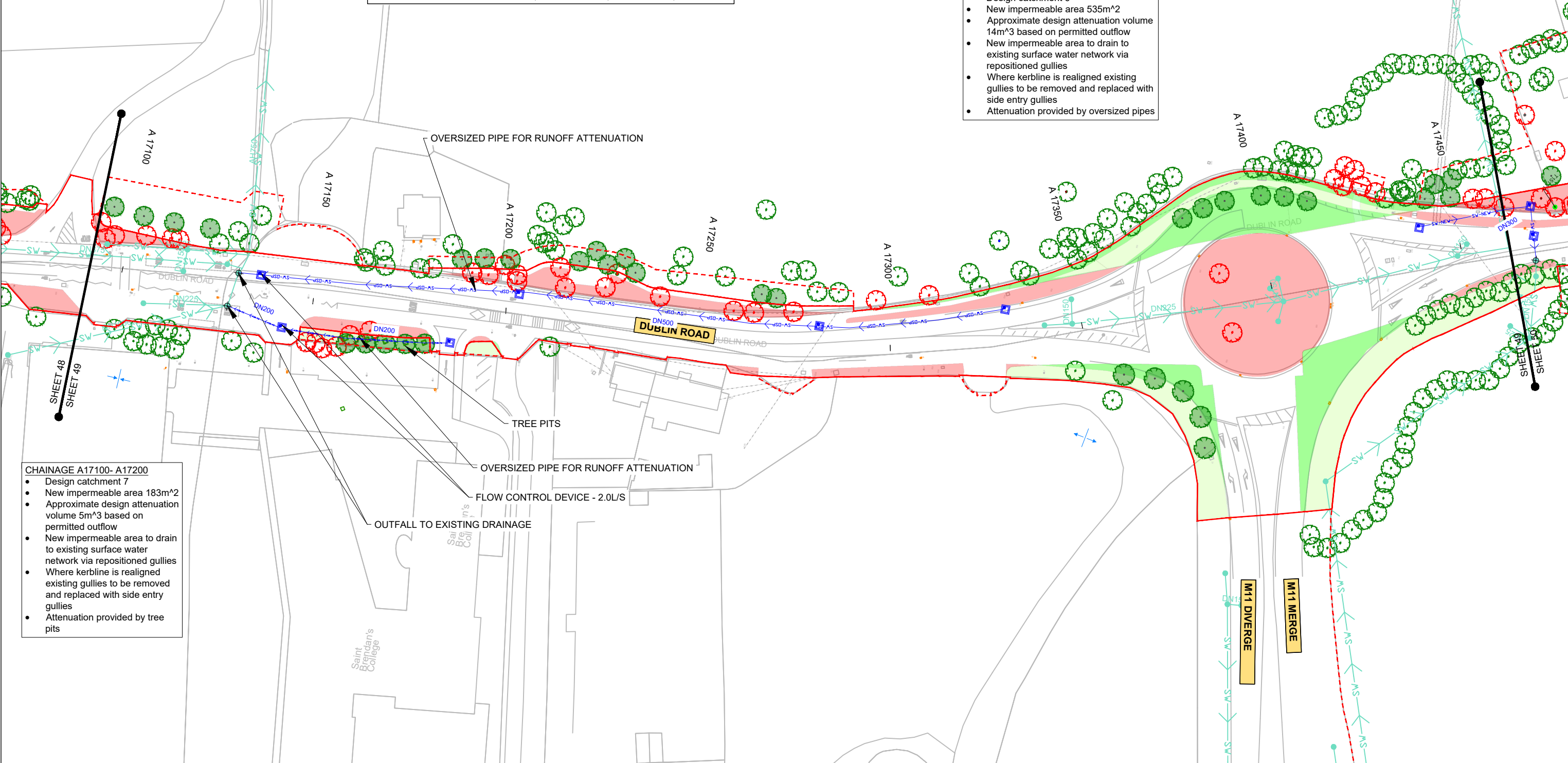
**LEGEND:**

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

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



- CHAINAGE A17200 - A17500**
- Design catchment 6
  - New impermeable area 535m<sup>2</sup>
  - Approximate design attenuation volume 14m<sup>3</sup> based on permitted outflow
  - New impermeable area to drain to existing surface water network via repositioned gullies
  - Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
  - Attenuation provided by oversized pipes



- CHAINAGE A17100- A17200**
- Design catchment 7
  - New impermeable area 183m<sup>2</sup>
  - Approximate design attenuation volume 5m<sup>3</sup> based on permitted outflow
  - New impermeable area to drain to existing surface water network via repositioned gullies
  - Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
  - Attenuation provided by tree pits

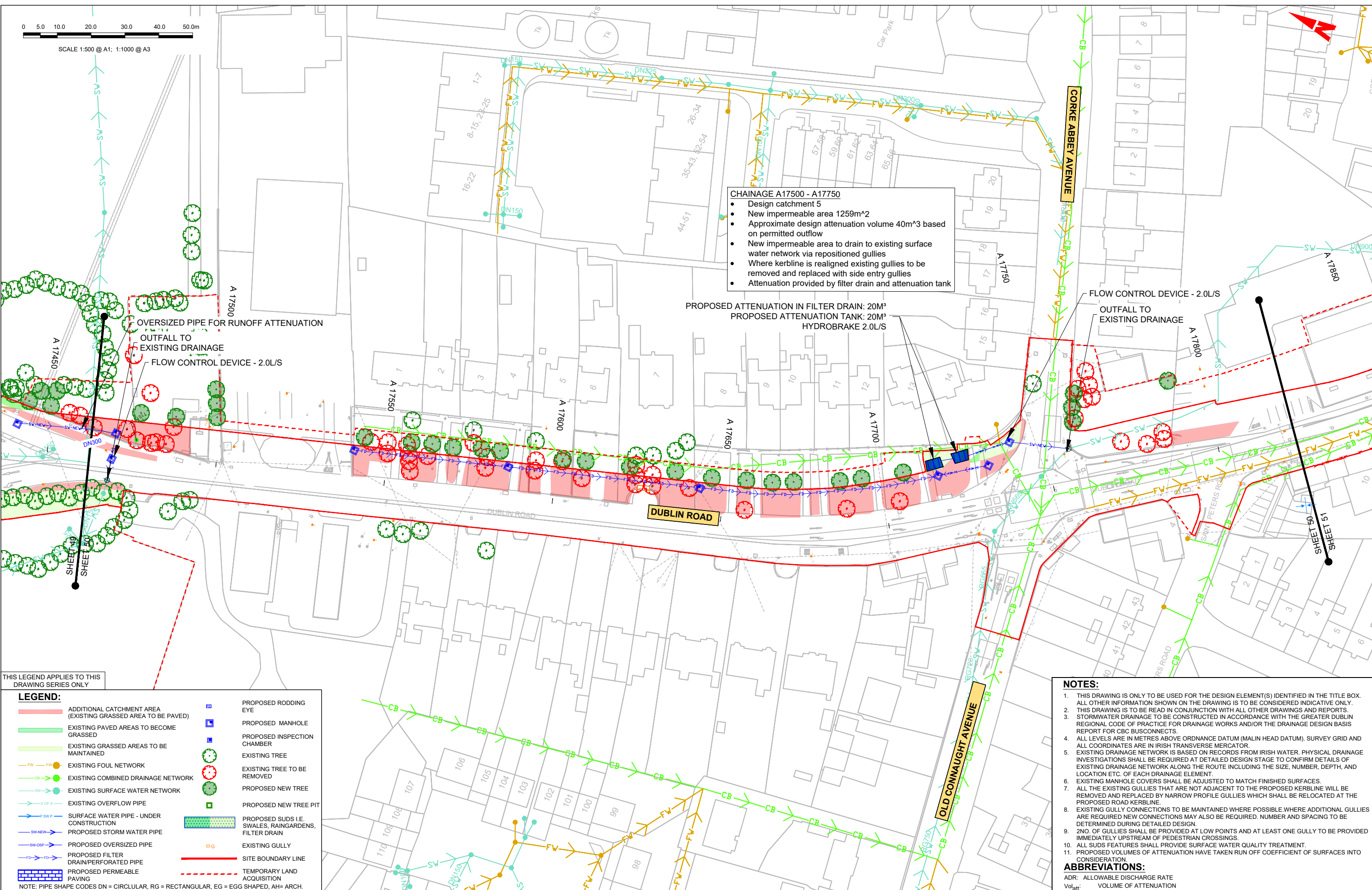
<p>Rev   Date   Dm   Chk'd   App'd   Description</p> <p>M01   08/05/2023   BD   NS   RS   ISSUE FOR PHASE 4: PLANNING</p>		<p>Client: <b>NTA</b> (Údarás Náisiúnta Iompair National Transport Authority)</p>		<p>Engineering Designer: <b>Jacobs</b></p>		<p>Programme Title: <b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b></p>	
<p>Date: 08/05/2023   Scale: 1:500 @ A1, 1:1000 @ A3</p>		<p>Project Code: BCIDB   Originator Code: JAC</p>		<p>Drawn: BD   Checked: NS   Approved: RS</p>		<p>Drawing Title: <b>BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</b></p>	
<p>Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0049</p>		<p>Sheet Number: 49 of 54</p>		<p>Status: A</p>		<p>Rev: M01</p>	

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



**CHAINAGE A17500 - A17750**

- Design catchment 5
- New impermeable area 1259m<sup>2</sup>
- Approximate design attenuation volume 40m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by filter drain and attenuation tank

PROPOSED ATTENUATION IN FILTER DRAIN: 20M<sup>3</sup>  
 PROPOSED ATTENUATION TANK: 20M<sup>3</sup>  
 HYDROBRAKE 2.0L/S

FLOW CONTROL DEVICE - 2.0L/S

OUTFALL TO EXISTING DRAINAGE

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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 PAVING
	PROPOSED PERMEABLE PAVING		

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**ABBREVIATIONS:**

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

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Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

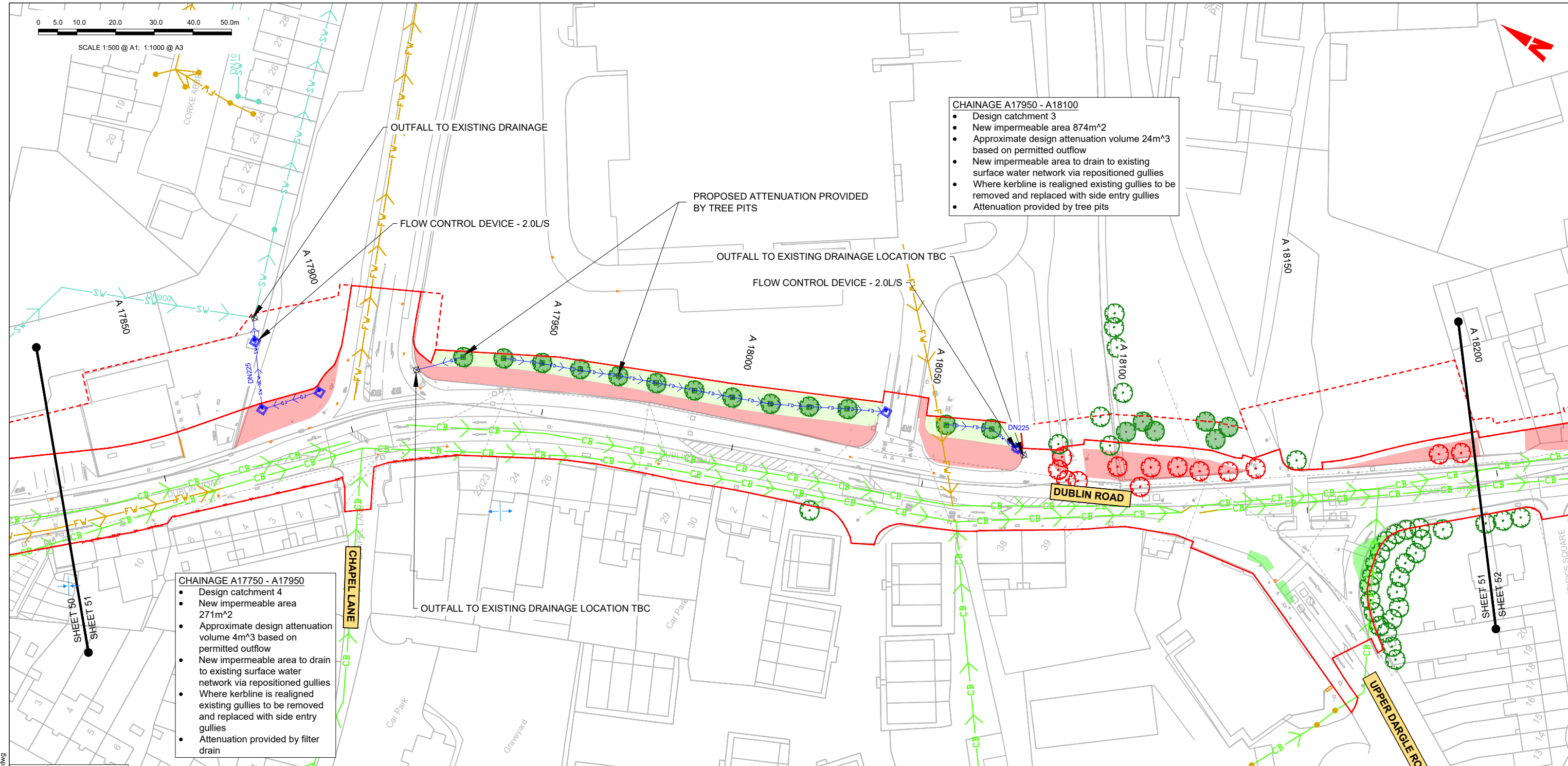
Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title	<b>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0050	50 of 54	A	M01

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**CHAINAGE A17950 - A18100**

- Design catchment 3
- New impermeable area 874m<sup>2</sup>
- Approximate design attenuation volume 24m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

**CHAINAGE A17750 - A17950**

- Design catchment 4
- New impermeable area 271m<sup>2</sup>
- Approximate design attenuation volume 4m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by filter drain

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**LEGEND:**

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

Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

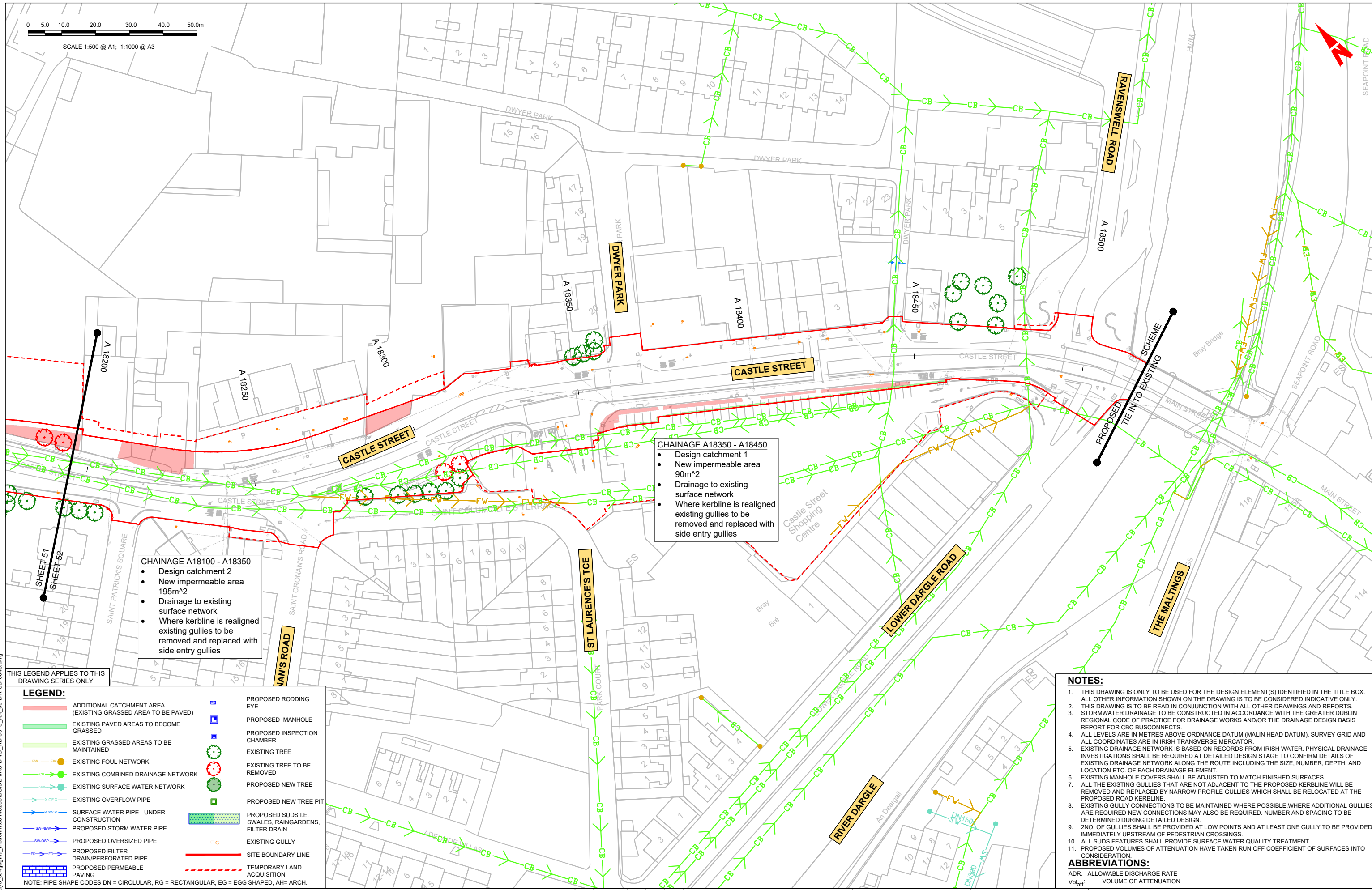
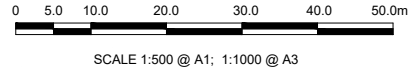
Client: **NTA**  
 Údarás Náisiúnta Iompair  
 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title <b>BUSCONNECTS DUBLIN</b>			
Drawing Title <b>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</b>			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0051			
Sheet Number 51 of 54	Status A	Rev M01	

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**CHAINAGE A18100 - A18350**

- Design catchment 2
- New impermeable area 195m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

**CHAINAGE A18350 - A18450**

- Design catchment 1
- New impermeable area 90m<sup>2</sup>
- Drainage to existing surface network
- Where kerbline is realigned 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
	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	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Engineering Designer: **Jacobs**

Date: 08/05/2023 | Scale: 1:500 @ A1, 1:1000 @ A3 | Drawn: BD | Checked: NS | Approved: RS

Project Code: BCIDB | Originator Code: JAC | QMS Code:

Programme Title: <b>BUSCONNECTS DUBLIN</b>			
CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0052	Sheet Number: 52 of 54	Status: A	Rev: M01

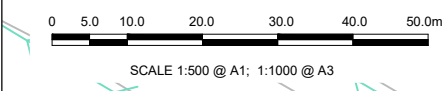
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**ABBREVIATIONS:**

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



THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

**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		

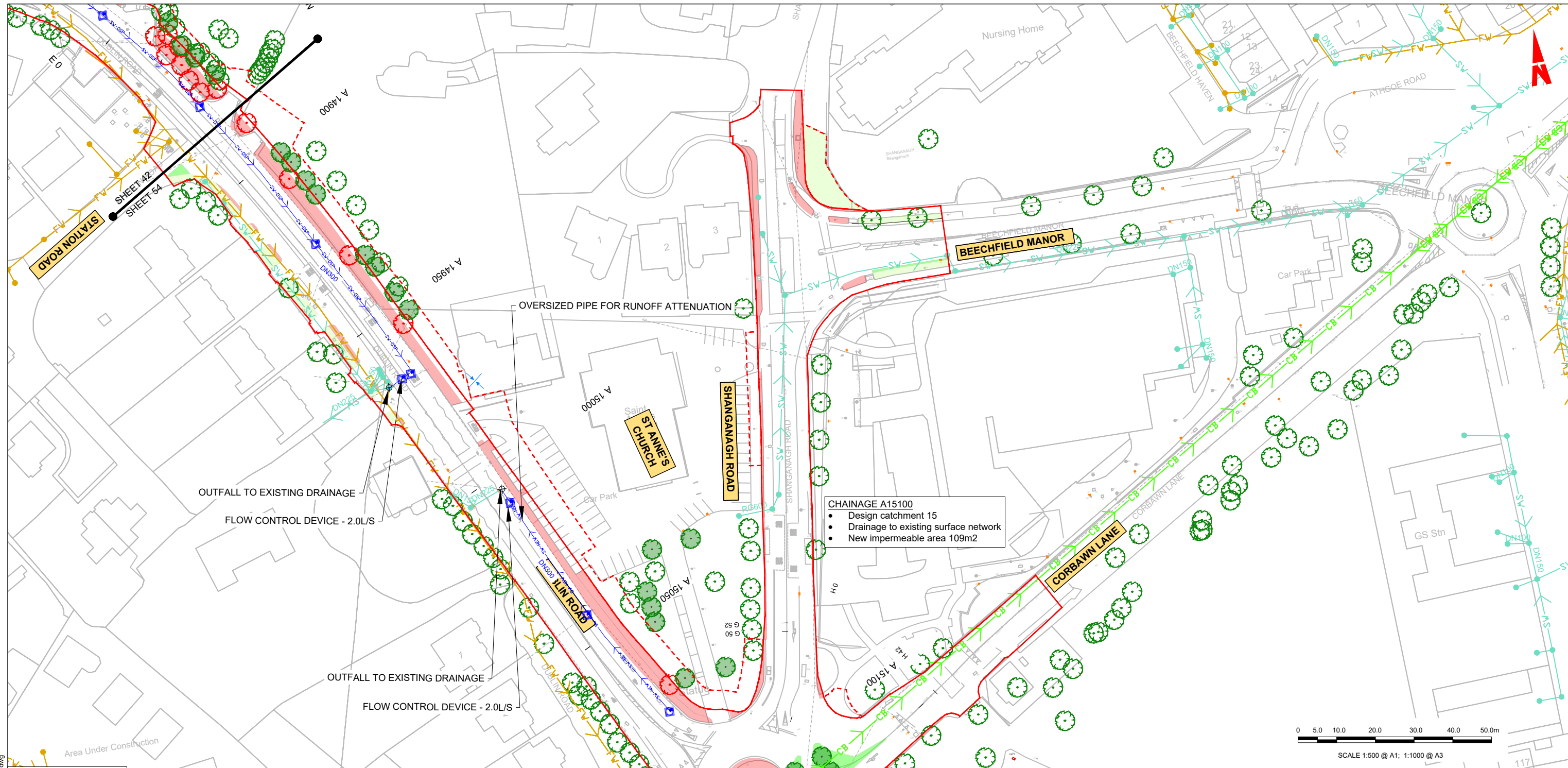
NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

**CHAINAGE E50 - E200**

- Design catchment 17
- New impermeable area 673m<sup>2</sup>
- Approximate design attenuation volume 23m<sup>3</sup> based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by filter drain

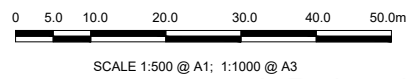
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**CHAINAGE A15100**

- Design catchment 15
- Drainage to existing surface network
- New impermeable area 109m2



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