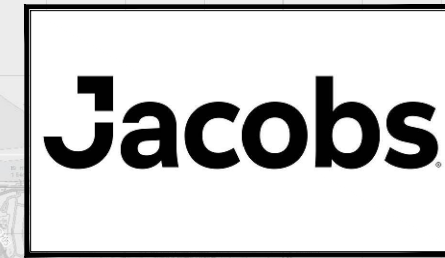
The background features a vibrant red field with various abstract geometric elements. In the top-left, a green shape with a red border curves into the frame. At the top-center, a green semi-circle with a red border is positioned. The top-right corner is filled with a blue and dark blue grid-like pattern, containing a white circle. The bottom-left has a blue horizontal bar with a white circle and a dark blue shape with a white circle. The bottom-right features a large green semi-circle with a white border, and below it, a dark blue semi-circle and a red semi-circle with a white border.

Appendix B11
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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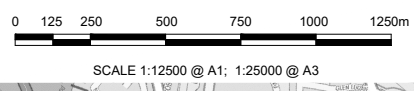
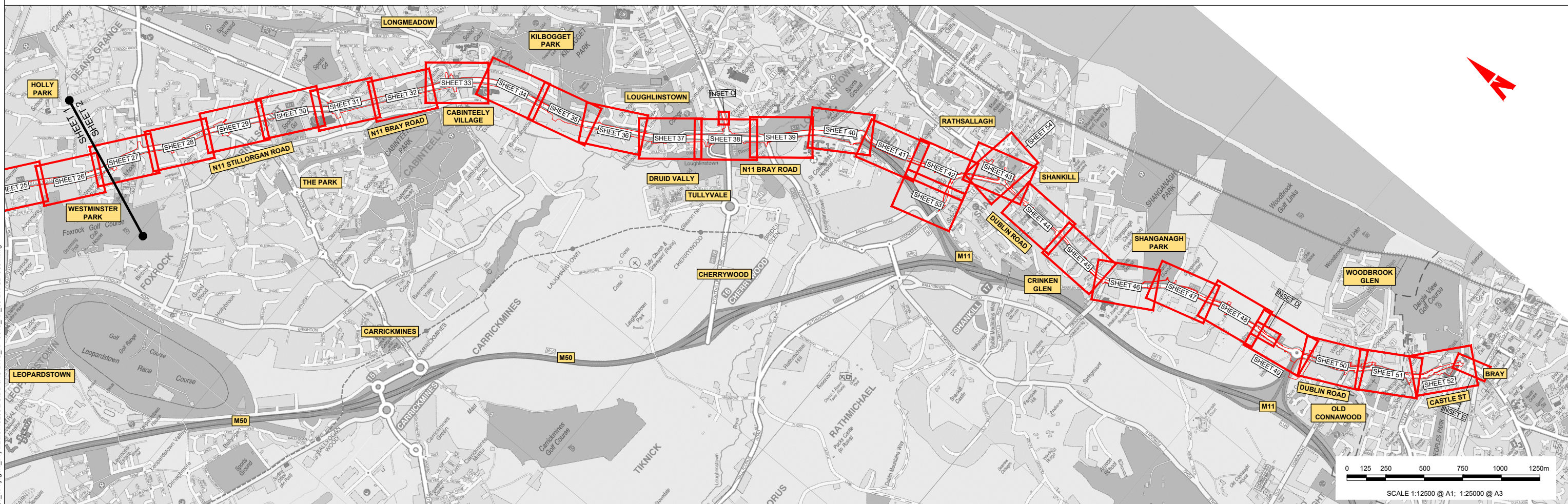
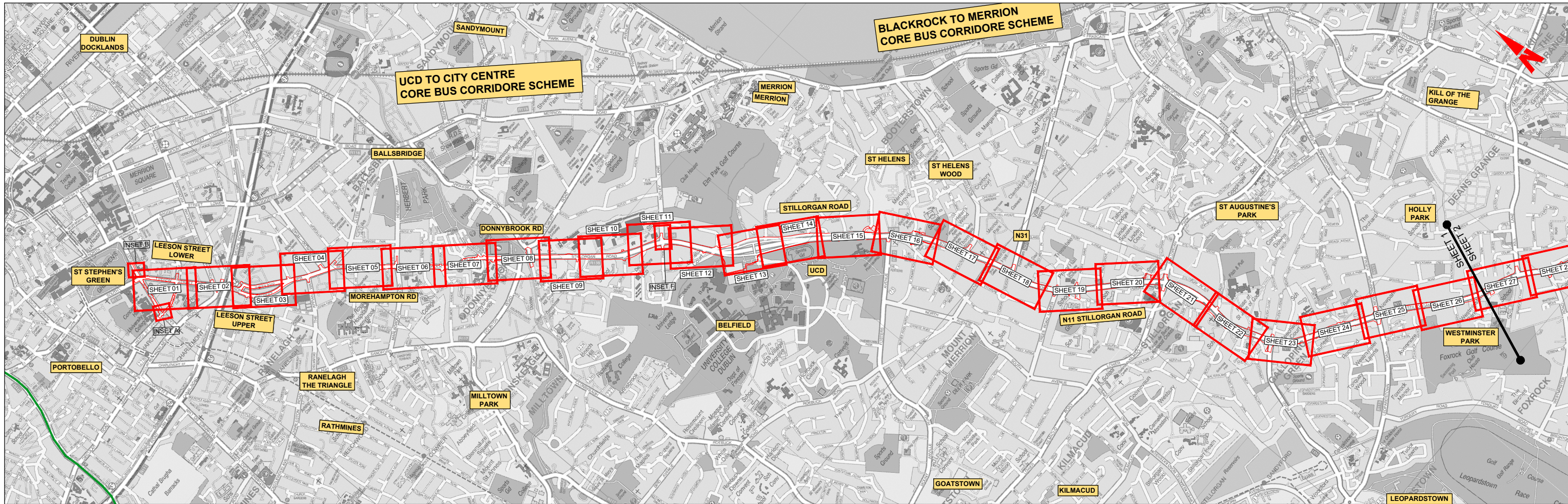


Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title 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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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: 1:12500 @ A1
 1:25000 @ A3

Project Code: BCIDB
 Originator Code: JAC

Drawn: BD
 Checked: NS
 Approved: RS

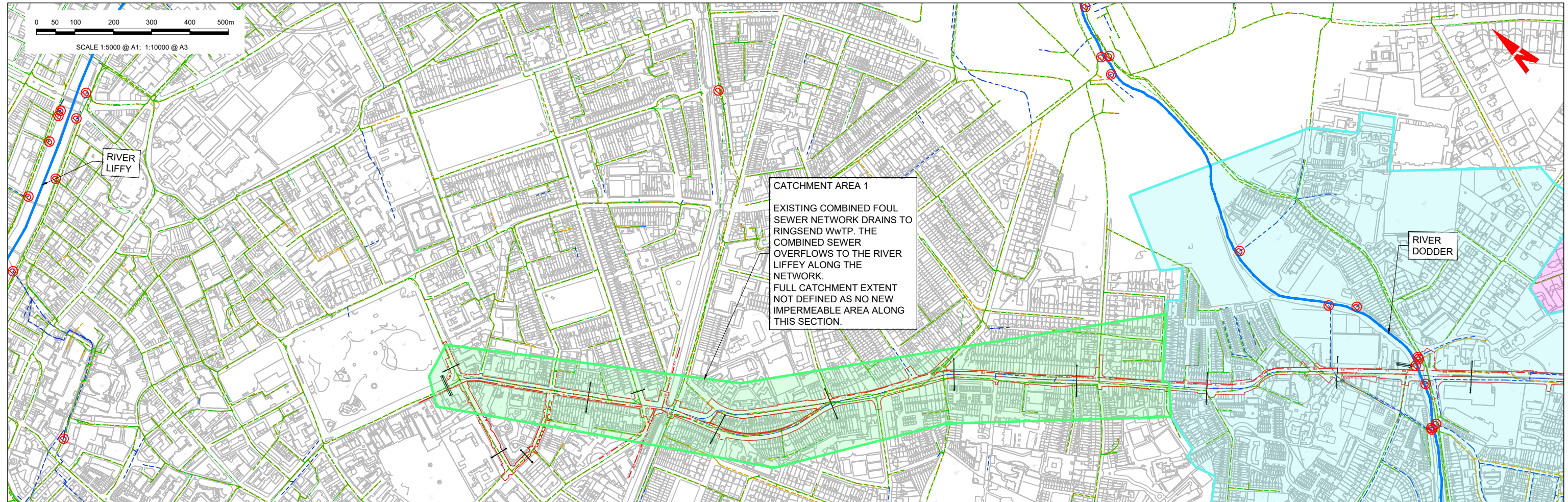
QMS Code

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_KP-0013_XX_00-DR-CD-0001	01 of 01	A	M01

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

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

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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
- 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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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

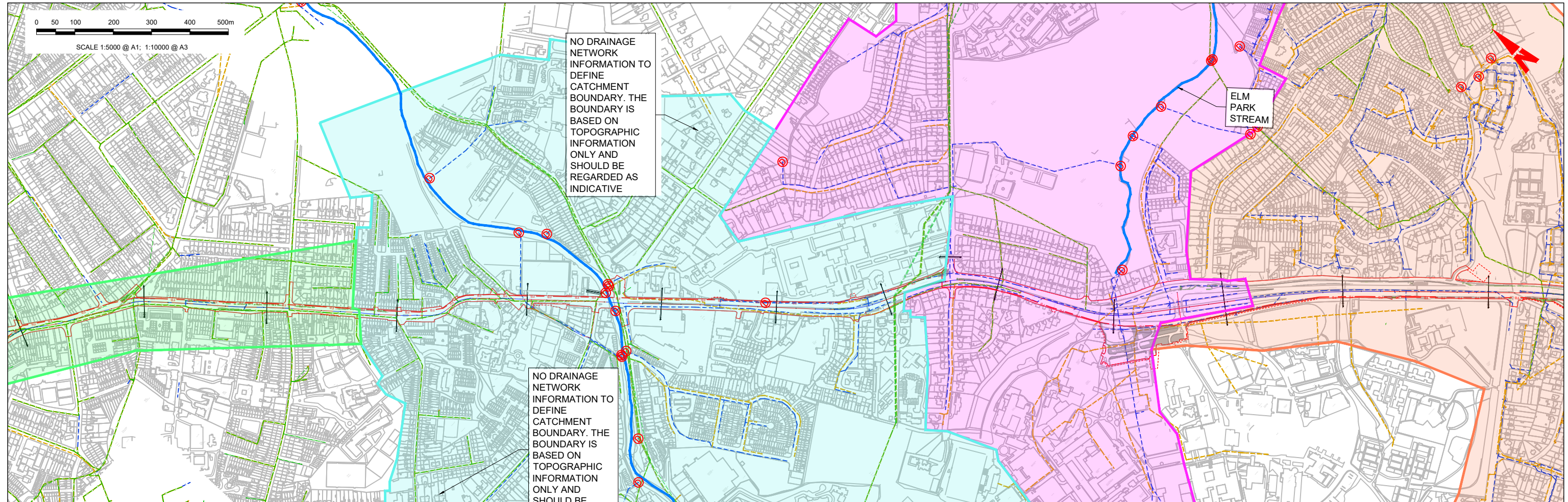
Project Code: BCIDB Originator Code: JAC

Drawn: BD Checked: NS Approved: RS

OMS Code

Programme Title BUSCONNECTS DUBLIN 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-1001	Sheet Number 01 of 11	Status A	Rev 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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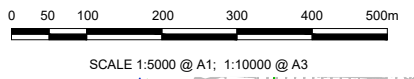
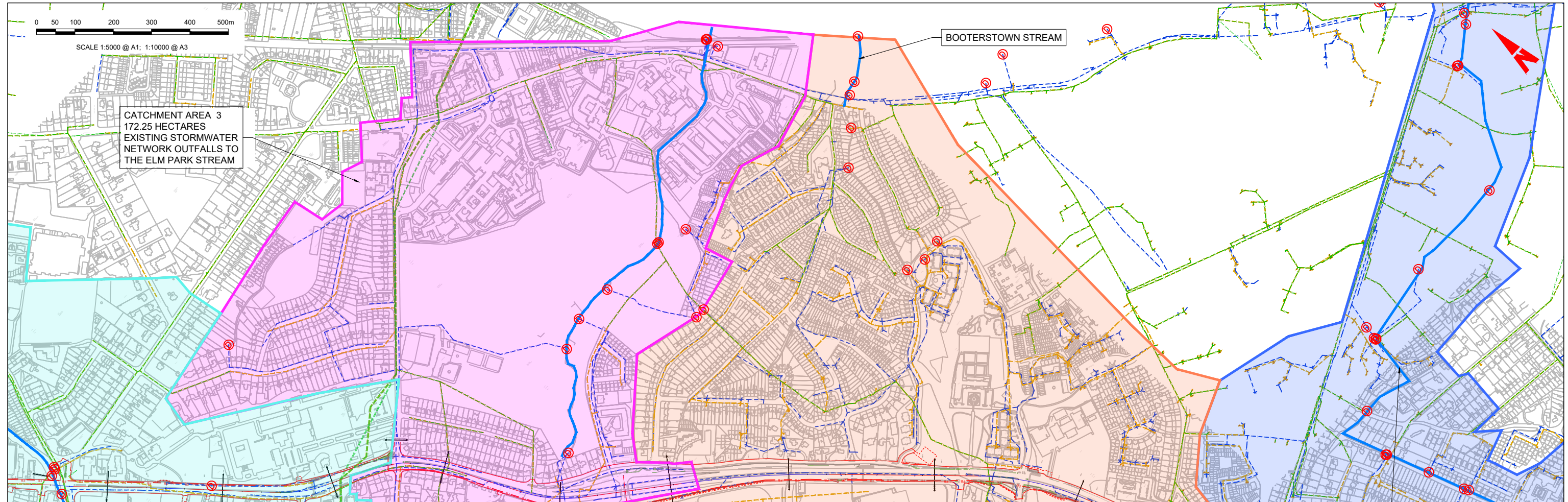
Client: **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

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

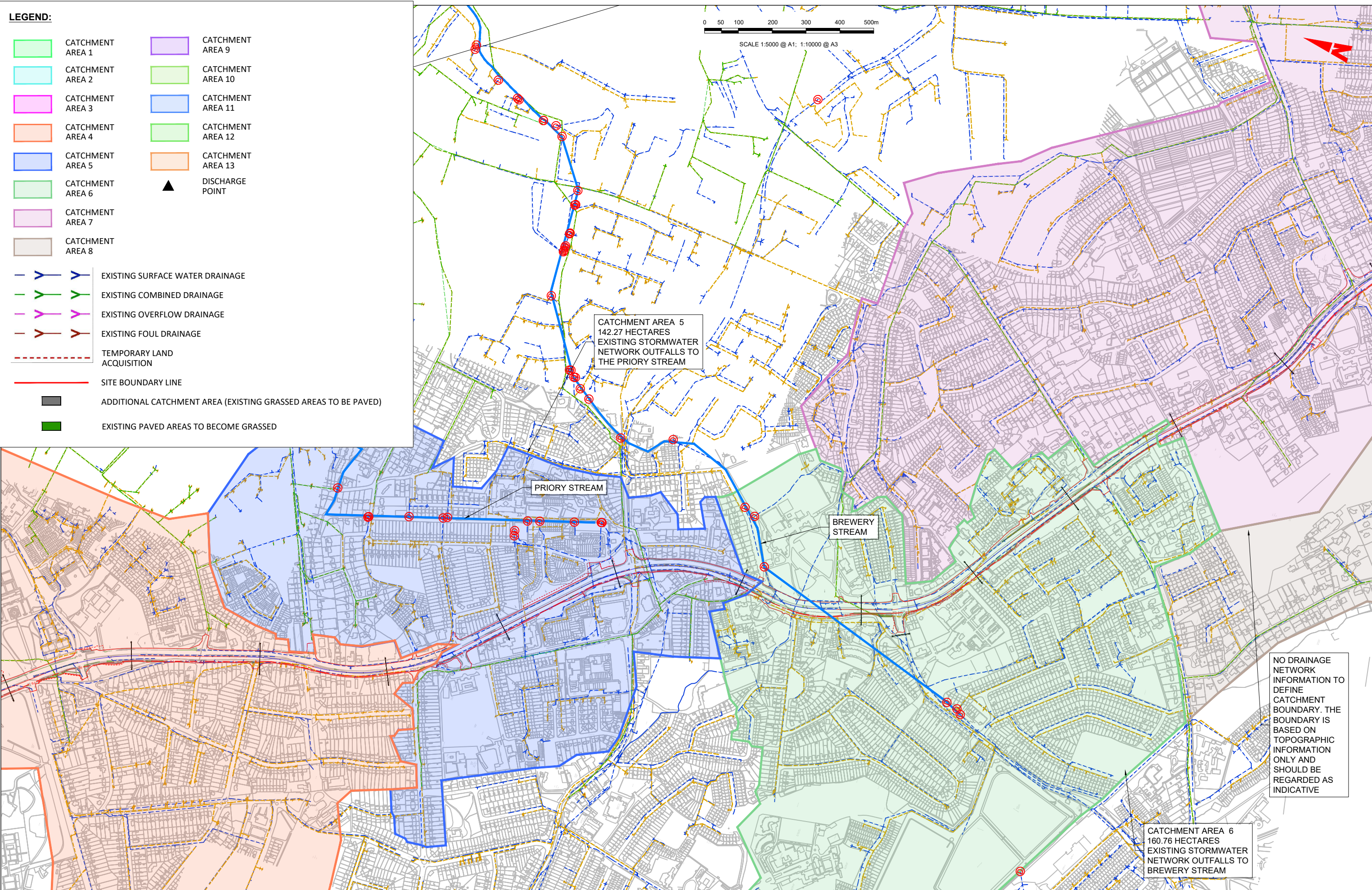
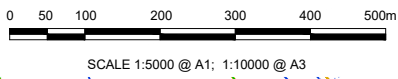
Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1003	03 of 11	A	M01

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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



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

CATCHMENT AREA 6
160.76 HECTARES
EXISTING STORMWATER NETWORK OUTFALLS TO BREWERY STREAM

CATCHMENT AREA 5
142.27 HECTARES
EXISTING STORMWATER NETWORK OUTFALLS TO THE PRIORY STREAM

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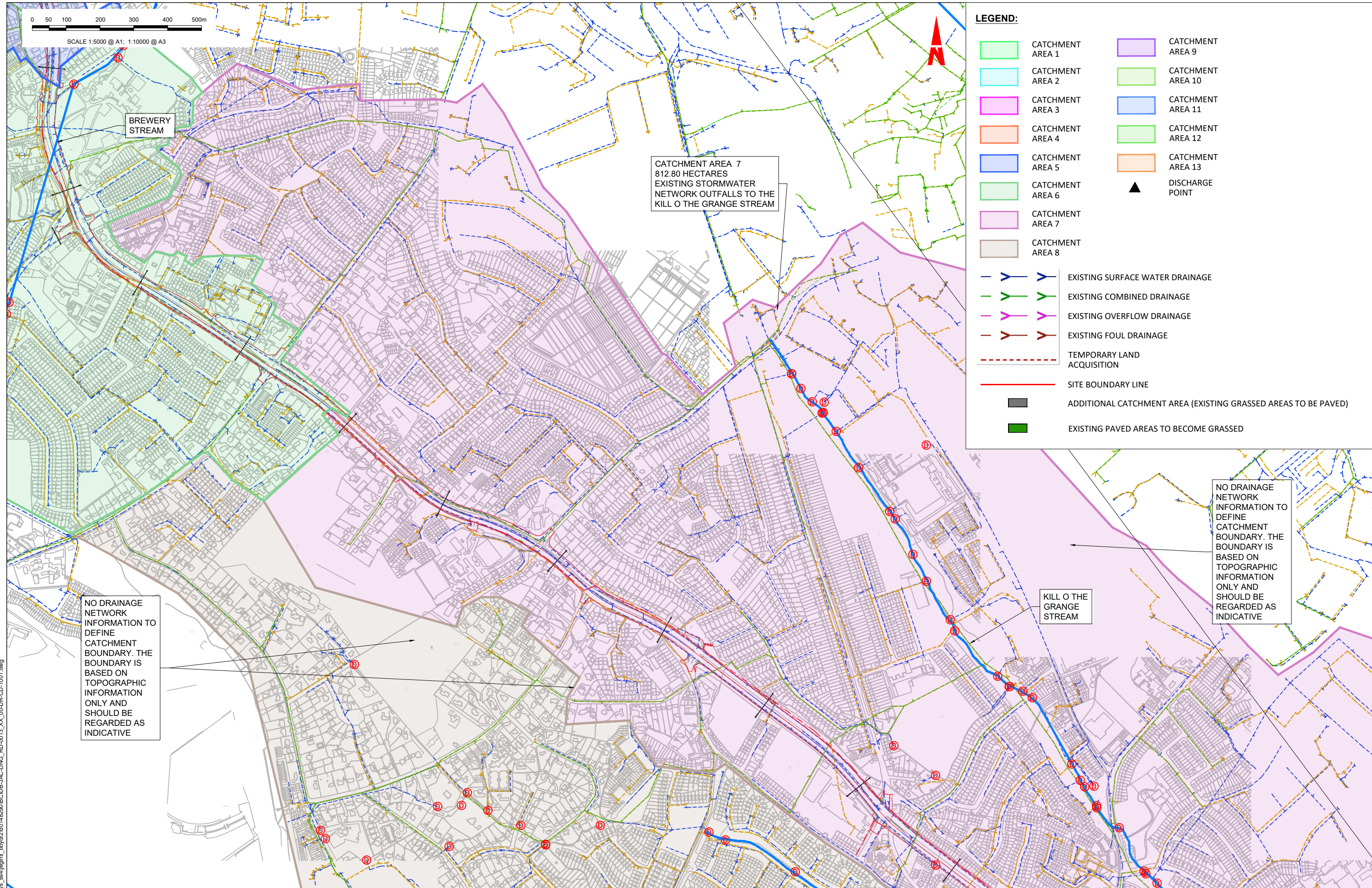
Client: **NTA**
Ódaráis Náisiúnta Iompair
National Transport Authority

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 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-1004	04 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		CATCHMENT AREA 13
	CATCHMENT AREA 7		DISCHARGE POINT
	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

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

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

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

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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: 08/05/2023 Scale: 1:5000 @ A1
1:10000 @ A3

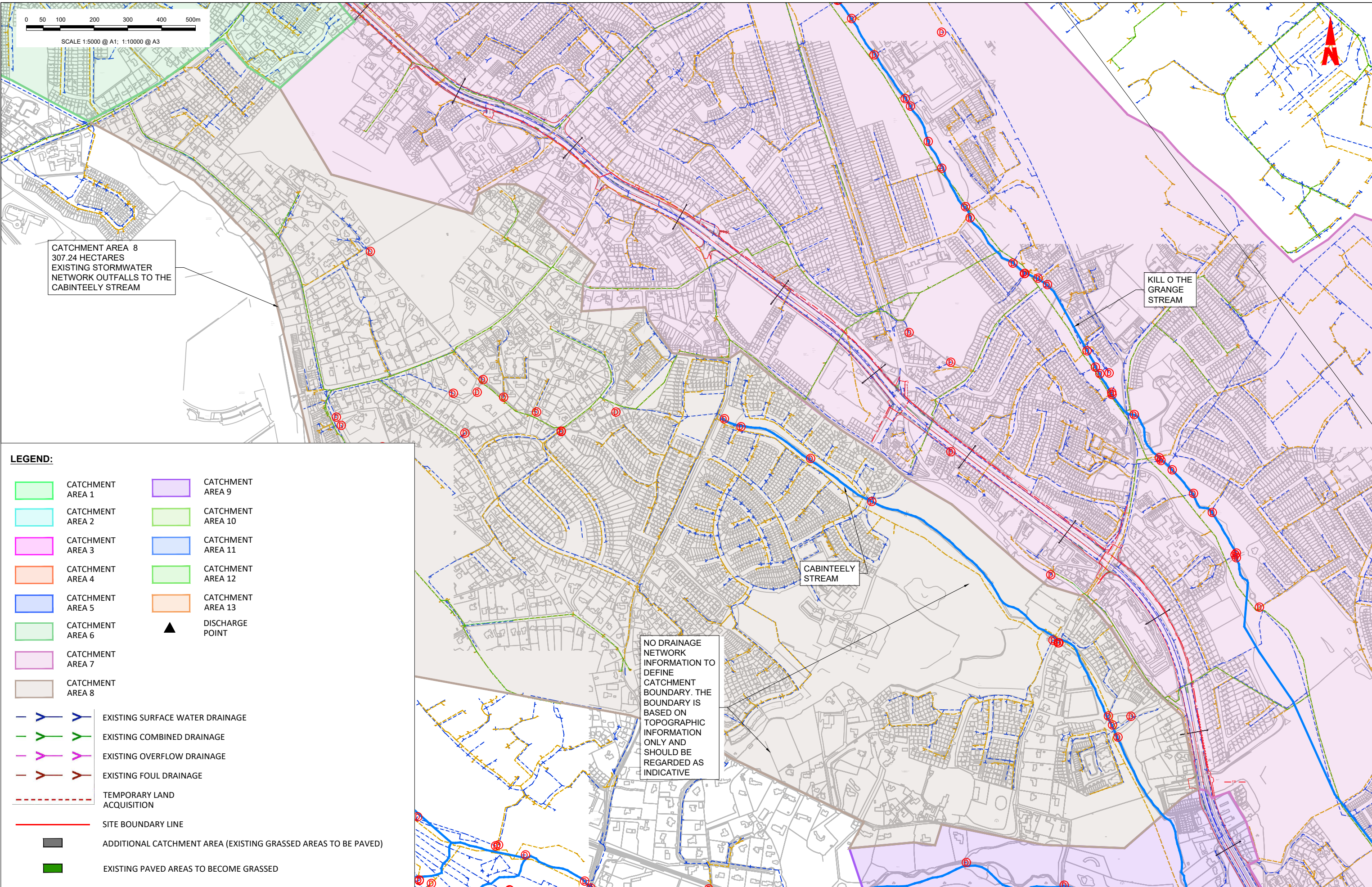
Project Code: BCIDB Originator Code: JAC

Drawn: BD Checked: NS Approved: RS

OMS Code

Programme Title: BUSCONNECTS DUBLIN			
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-1005	Sheet Number: 05 of 11	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

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

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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: BUSCONNECTS DUBLIN			
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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0 50 100 200 300 400 500m

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

C:\pwworking\jacobs_uk_highways_as\legintl_bovard\2014\2820\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001.dwg

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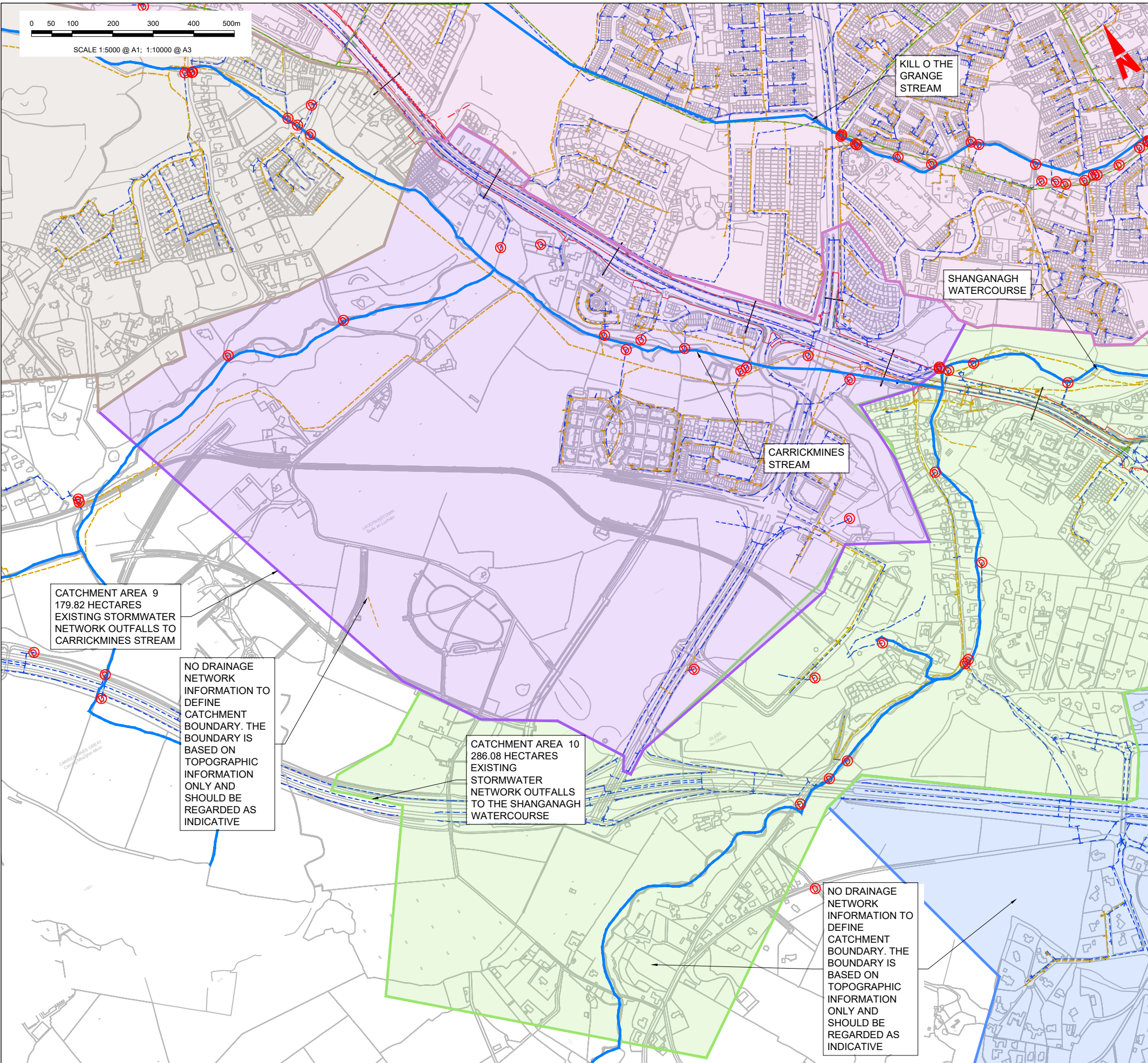
Client: **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

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			
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-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
ONLY AND
SHOULD BE
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 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			
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-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

C:\pwworking\jacobs_uk_highways_asd\legintl_bovard\2d\148280\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001.dwg

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

Engineering Designer: **Jacobs**

Date: 08/05/2023 Scale: 1:5000 @ A1, 1:10000 @ A3

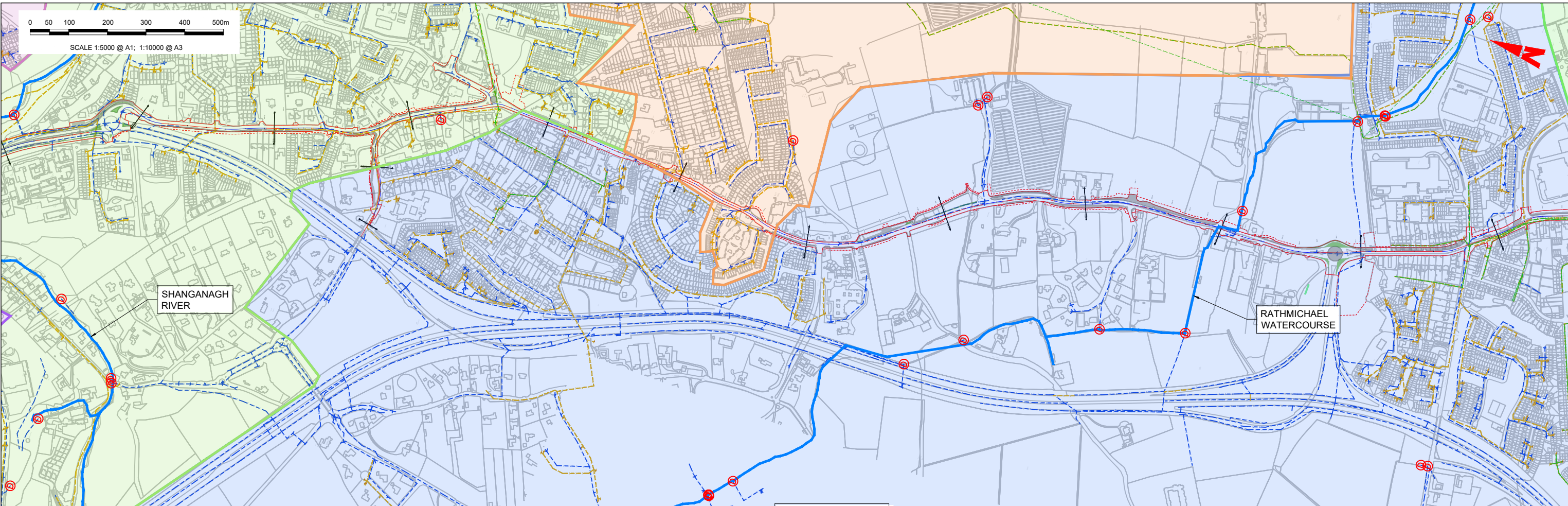
Project Code: BCIDB Originator Code: JAC

Drawn: BD Checked: NS Approved: RS

OMS Code:

Programme Title: BUSCONNECTS DUBLIN			
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-1009	Sheet Number: 09 of 11	Status: A	Rev: 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
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ONLY AND
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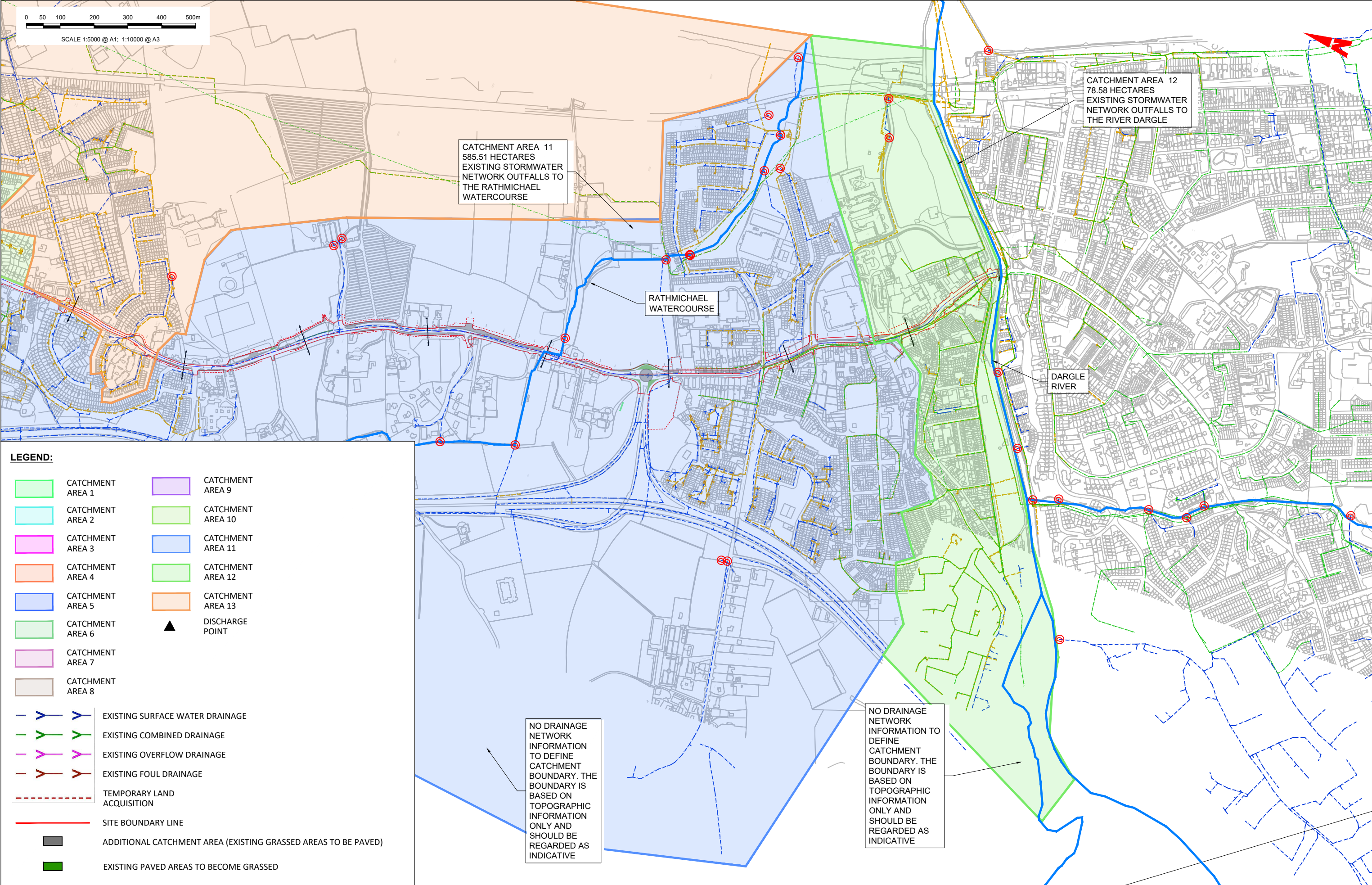
Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

 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	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-1010	10 of 11	A	M01

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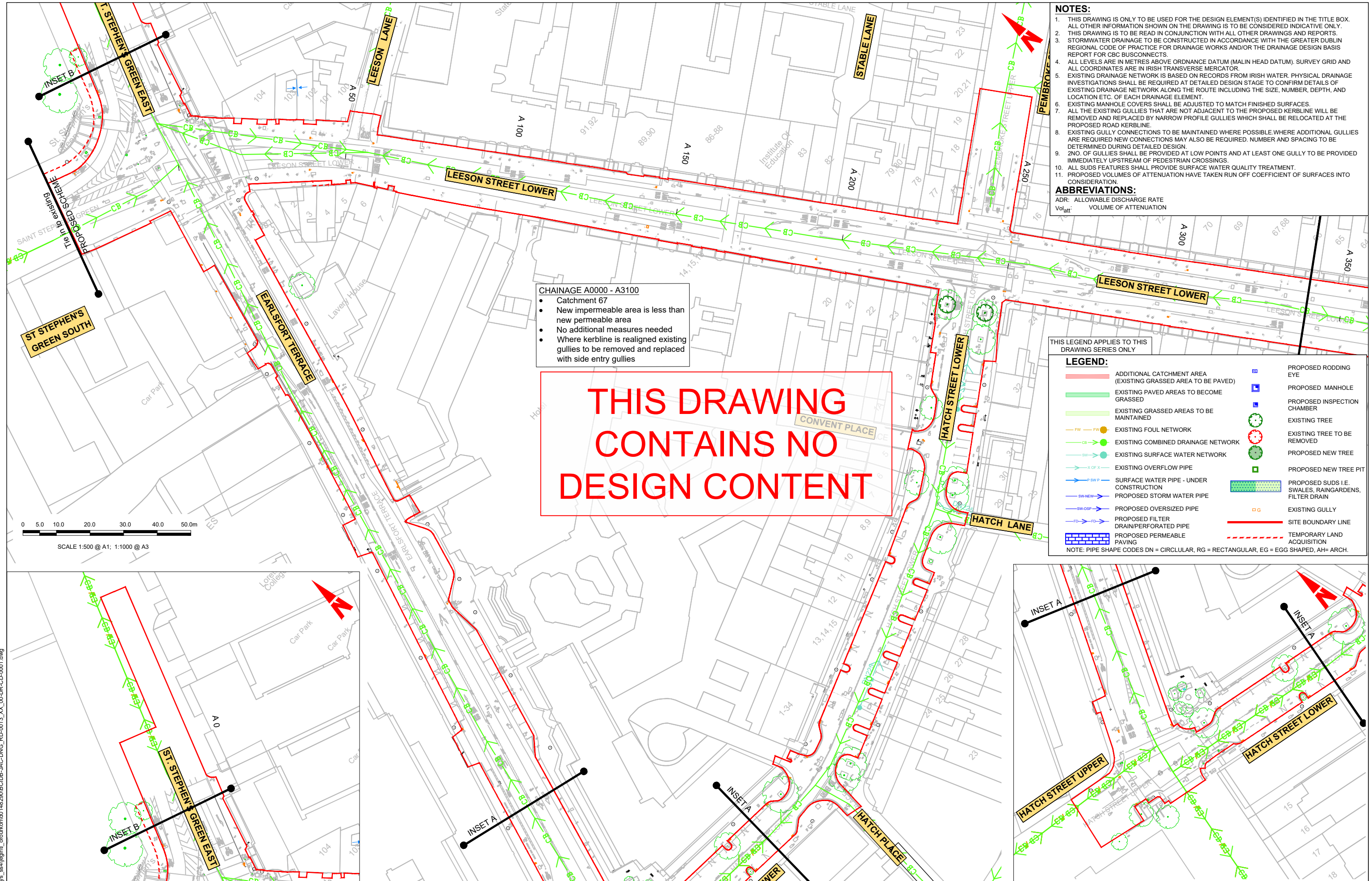
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Client		Engineering Designer		Programme Title	
NTA Údarás Náisiúnta Iompair National Transport Authority		Jacobs		BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS	
Date	Scale	Drawn	Checked	Approved	Drawing Title
08/05/2023	1:5000 @ A1 1:10000 @ 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

Project Ireland 2040
Building Ireland's Future

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- NOTES:**
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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_{att}: 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

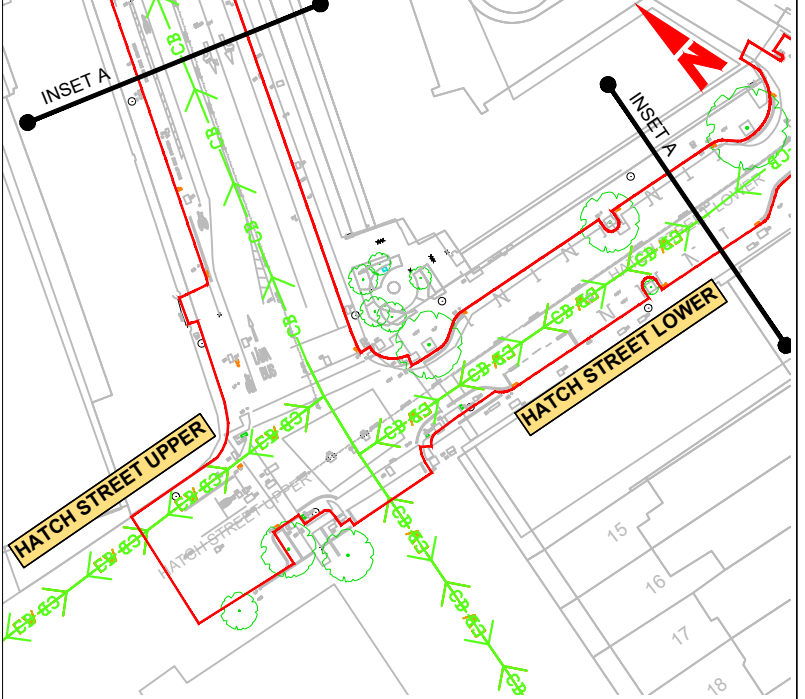
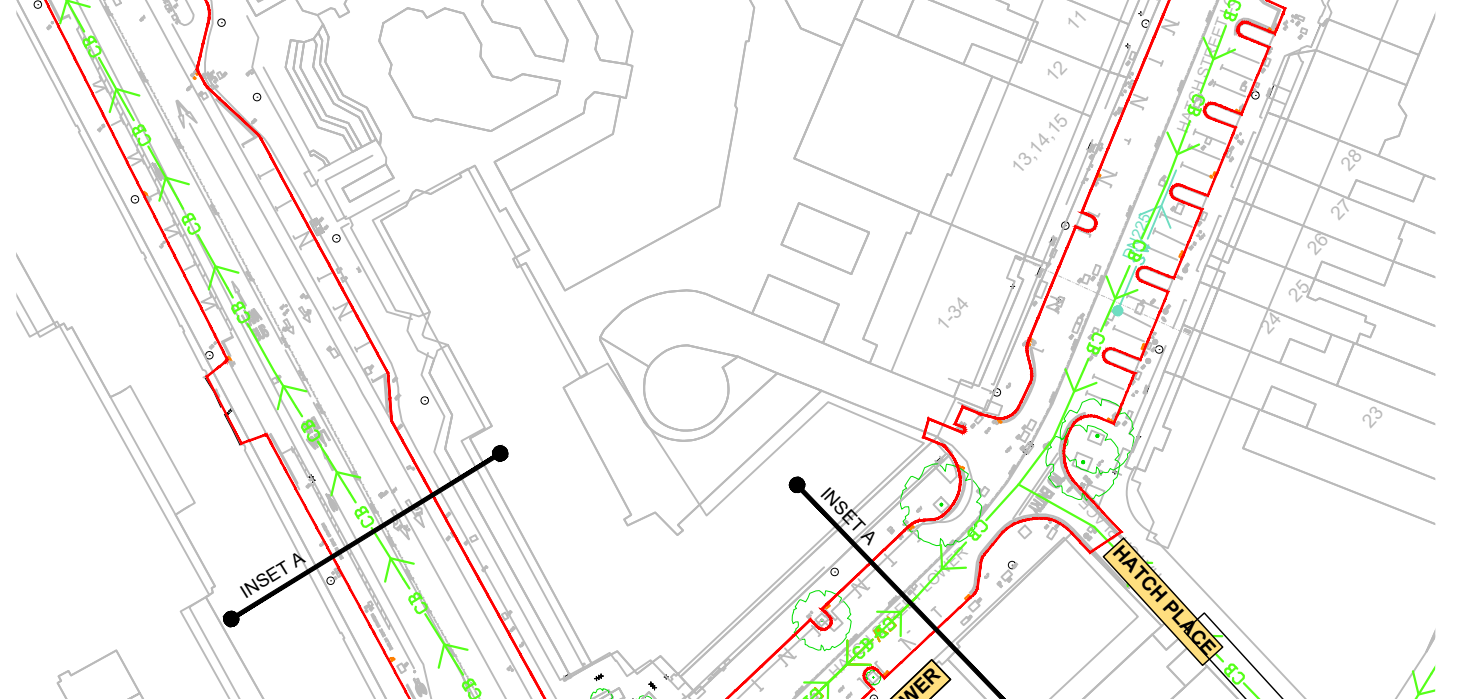
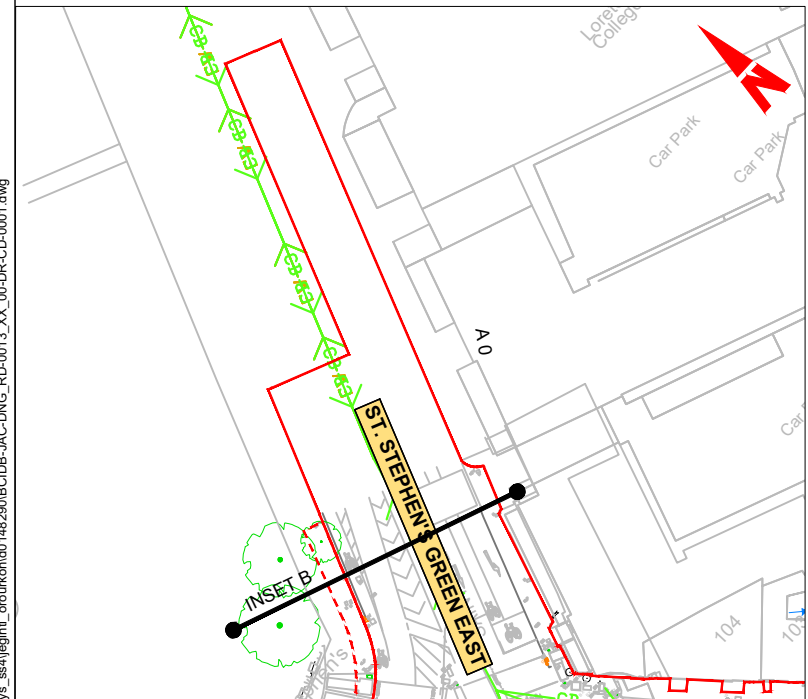
THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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
 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**
 Ódarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer: **Jacobs**

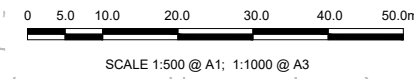
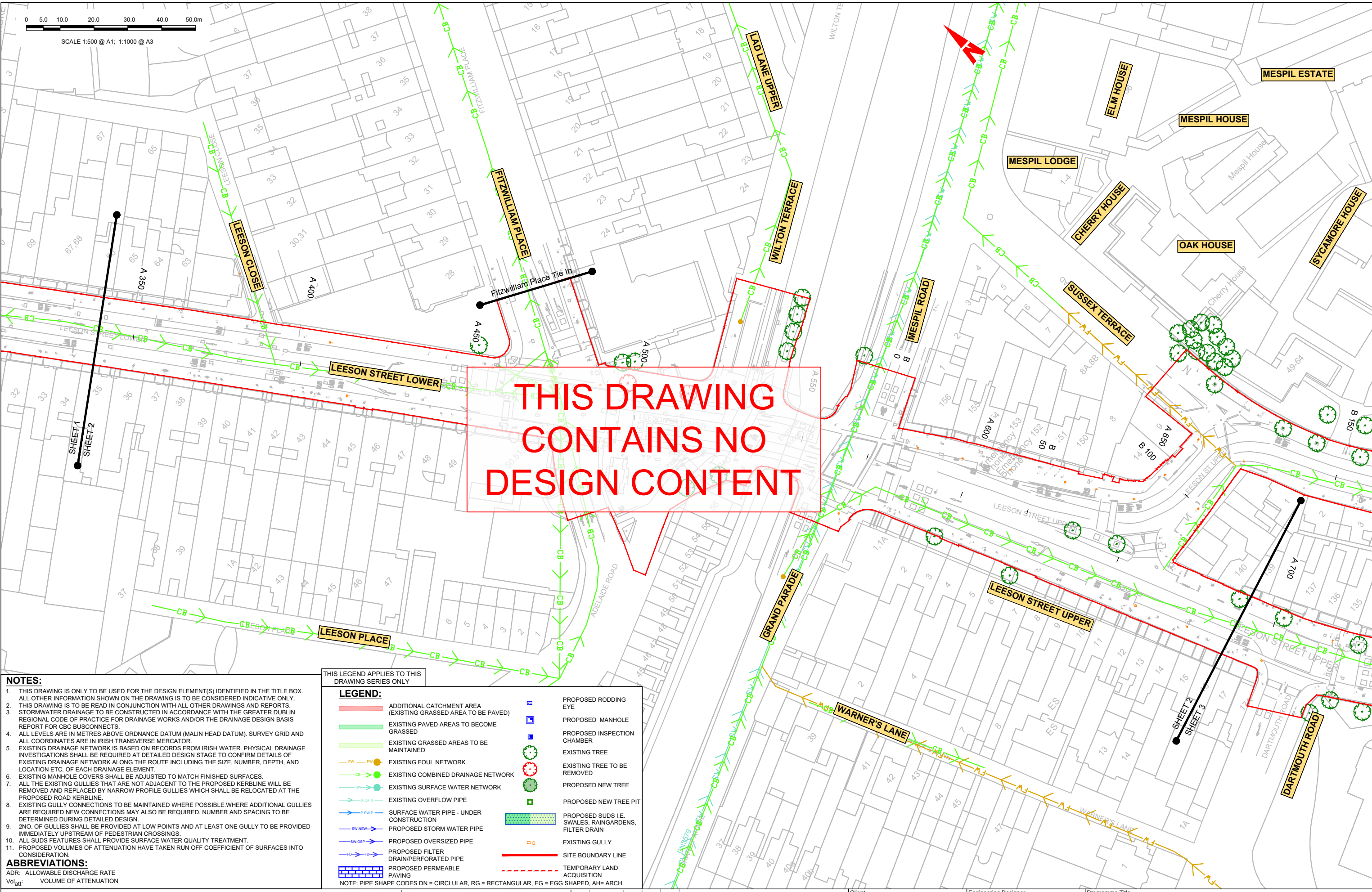
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS Code		
BCIDB	JAC			

Programme Title: **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-0001	01 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
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	EXISTING OVERFLOW PIPE		PROPOSED NEW TREE PIT
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	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
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	PROPOSED PERMEABLE PAVING		

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ABBREVIATIONS:
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 Vol_{att}: VOLUME OF ATTENUATION

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

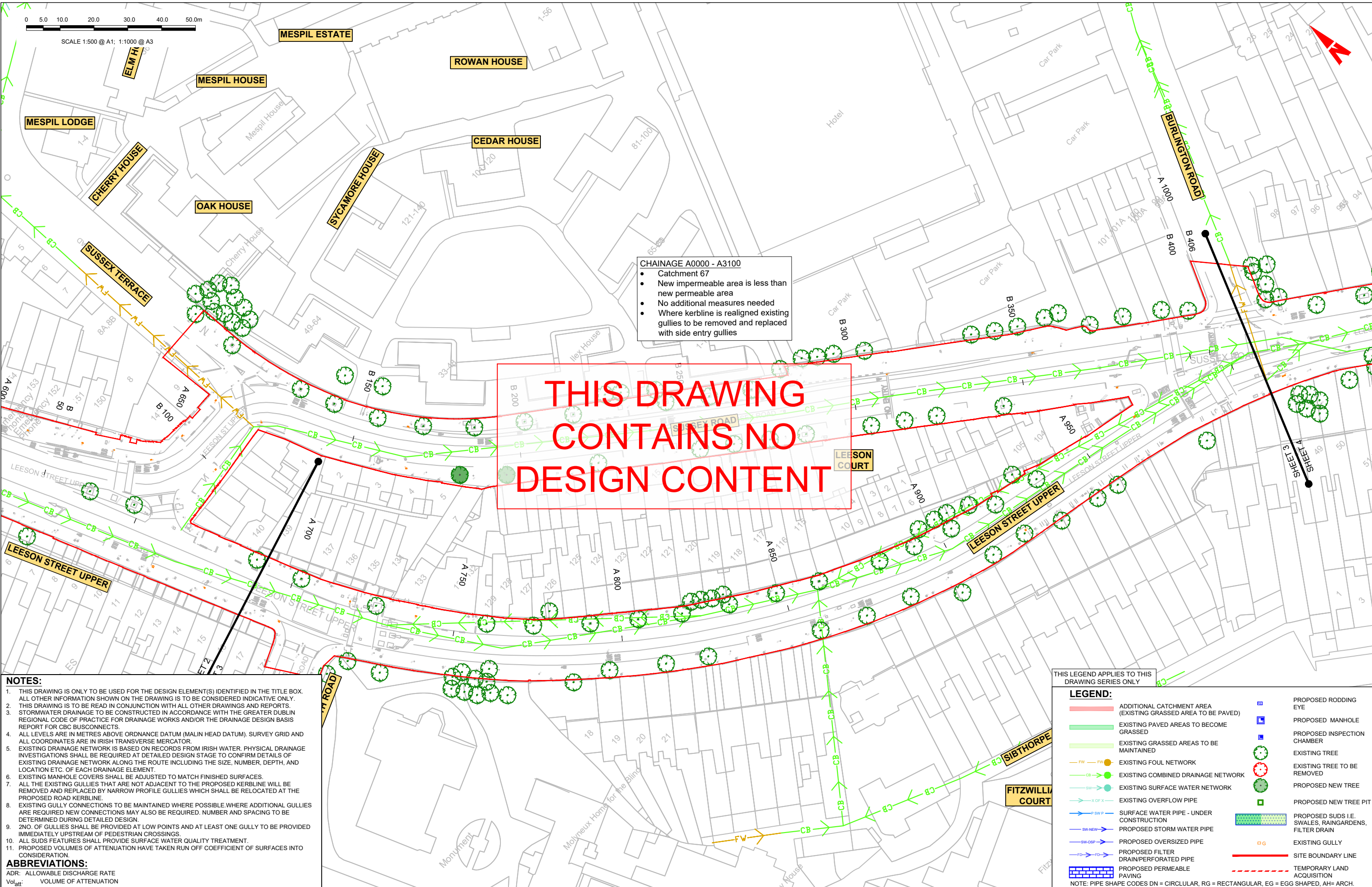
Client: **NTA** (Údarás Náisiúnta Iompair National Transport Authority)

Engineering Designer: **Jacobs**

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

Programme Title	BUSCONNECTS DUBLIN		
Drawing Title	CORE BUS CORRIDORS INFRASTRUCTURE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0002	02 of 54	A	M01

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CHAINAGE A0000 - A3100

- Catchment 67
- New impermeable area is less than new permeable area
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- 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_{att}: VOLUME OF ATTENUATION

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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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			
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-0003	03 of 54	A	M01

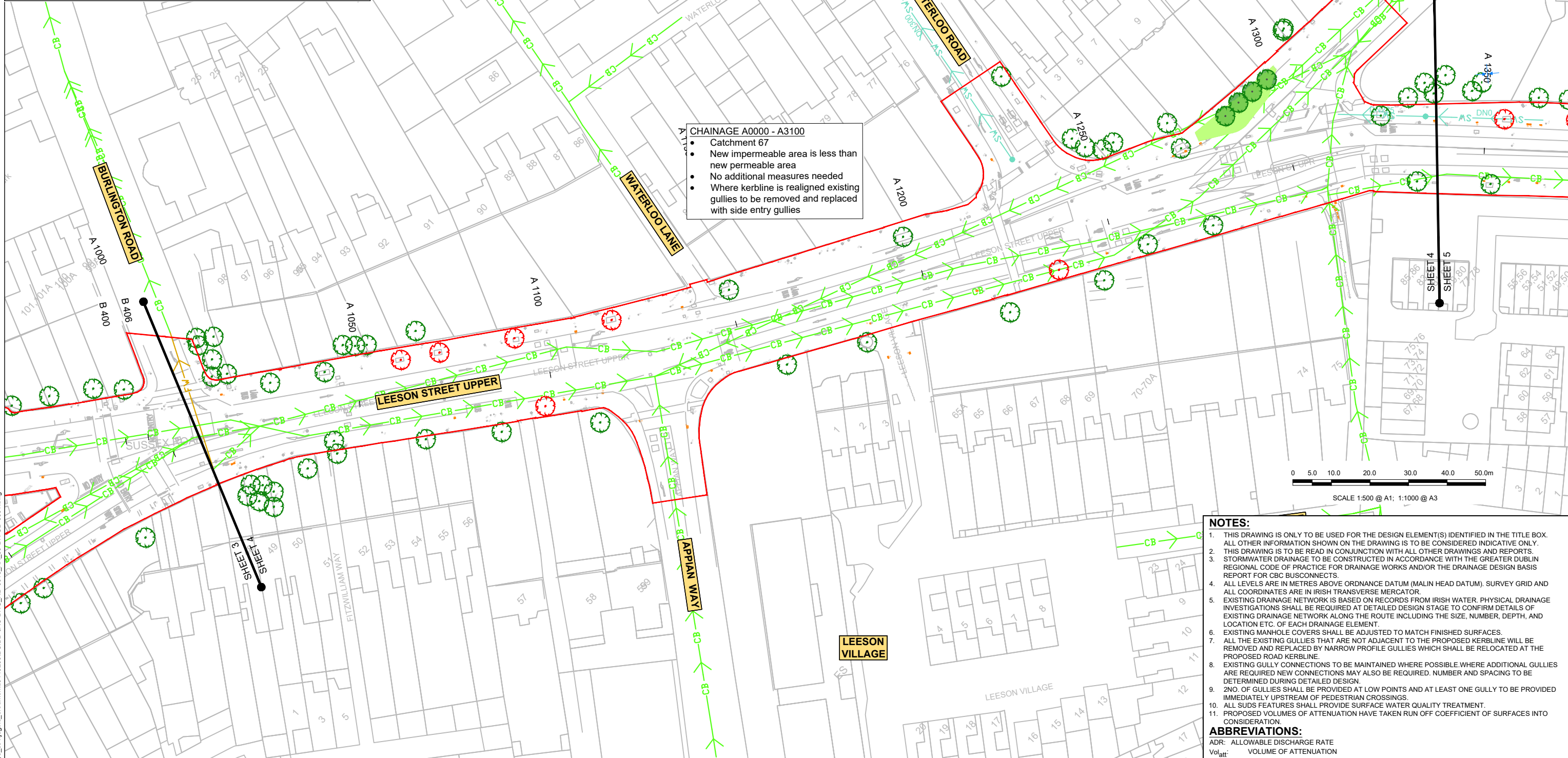
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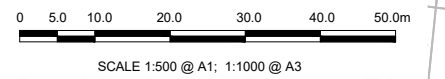
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CHAINAGE A0000 - A3100

- Catchment 67
- New impermeable area is less than new permeable area
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Rev	Date	Dm	Chk'd	App'd	Description
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Client: **NTA** (Údarás Náisiúnta Iompair National Transport Authority)

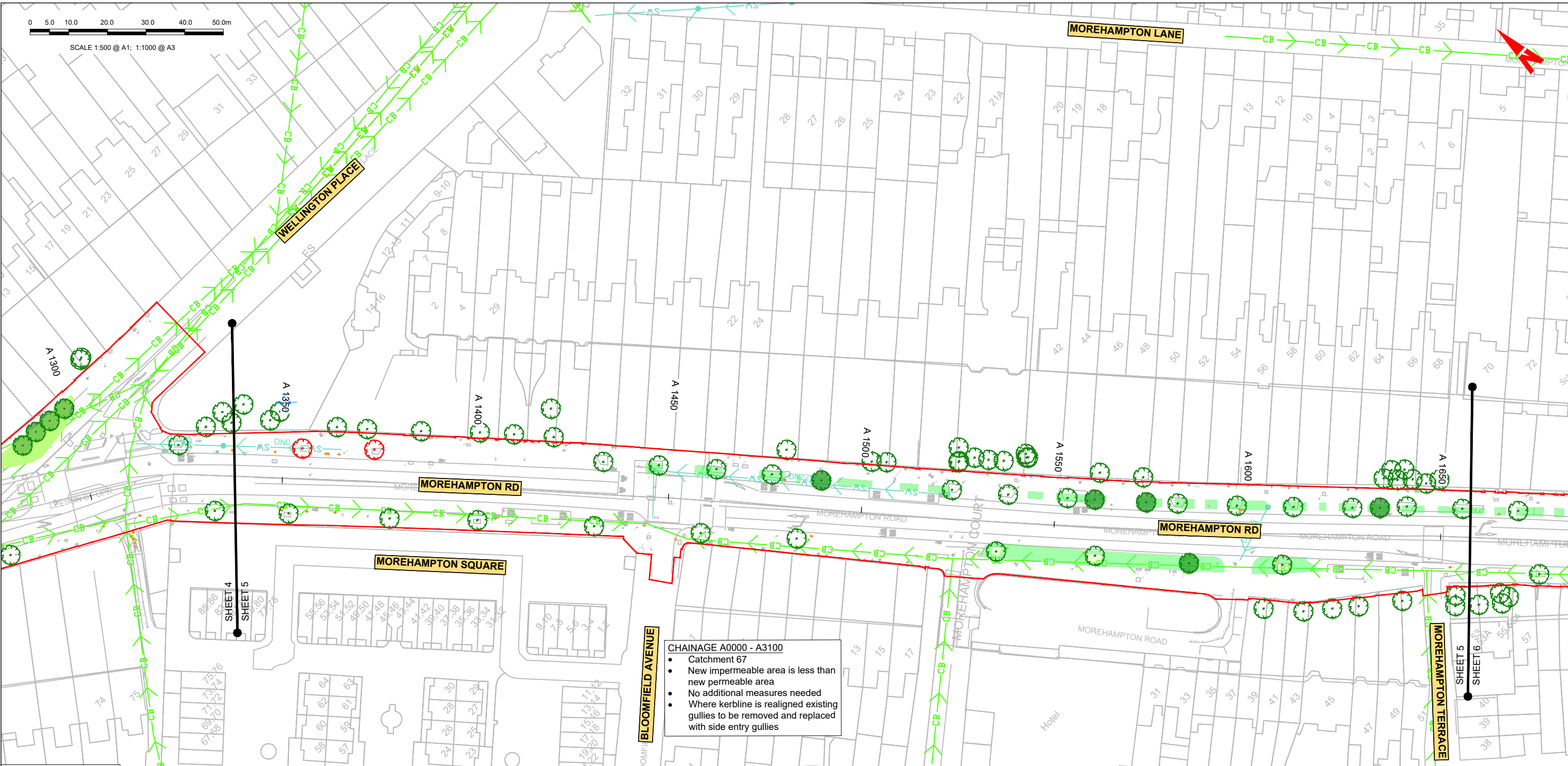
Engineering Designer: **Jacobs**

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: [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-0004	04 of 54	A	M01

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CHAINAGE A0000 - A3100

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LEGEND:	
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
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	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
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8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

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Project Ireland 2040
 Building Ireland's Future

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

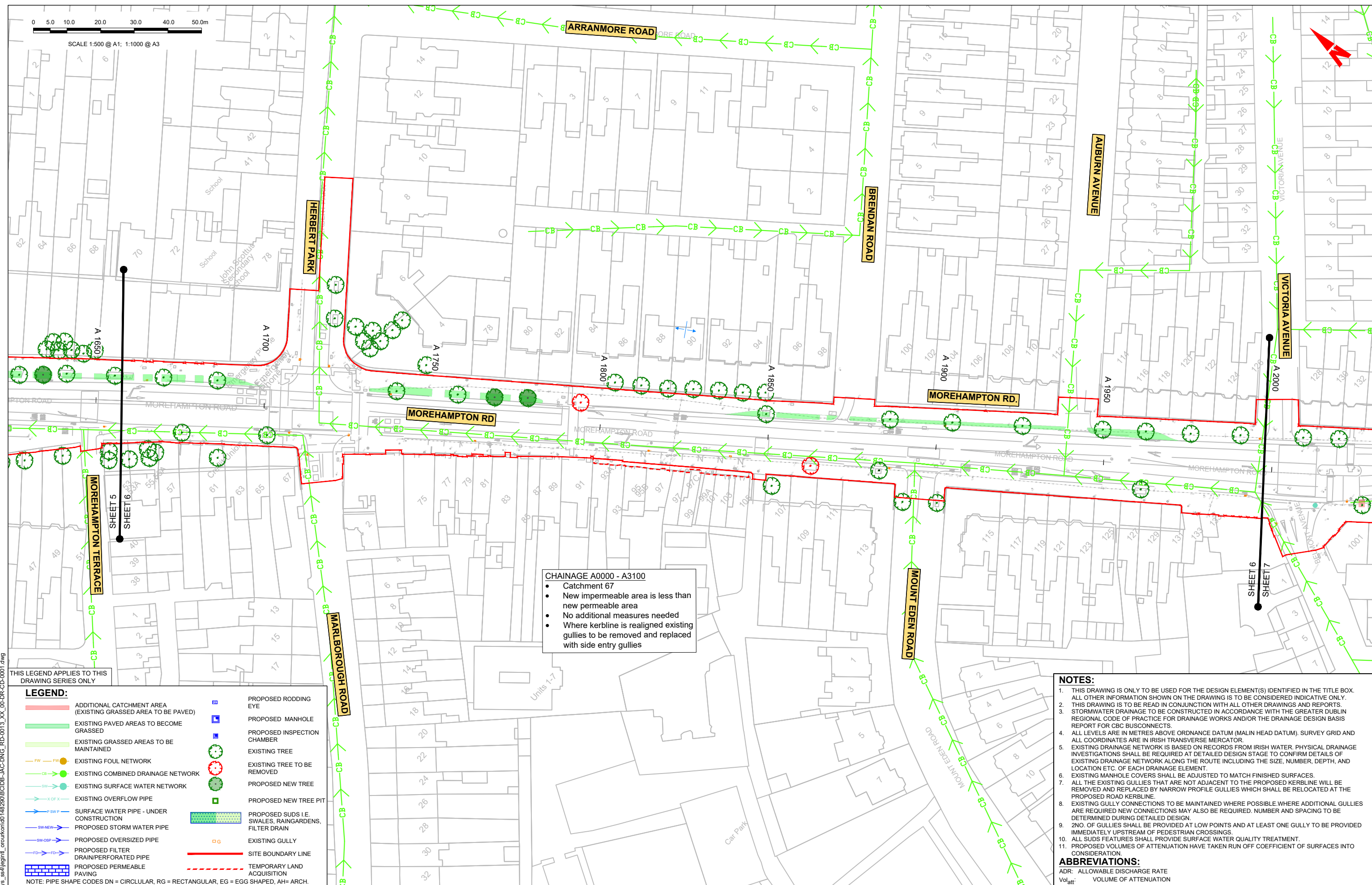
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

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: [blank]

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



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

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.

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

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

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

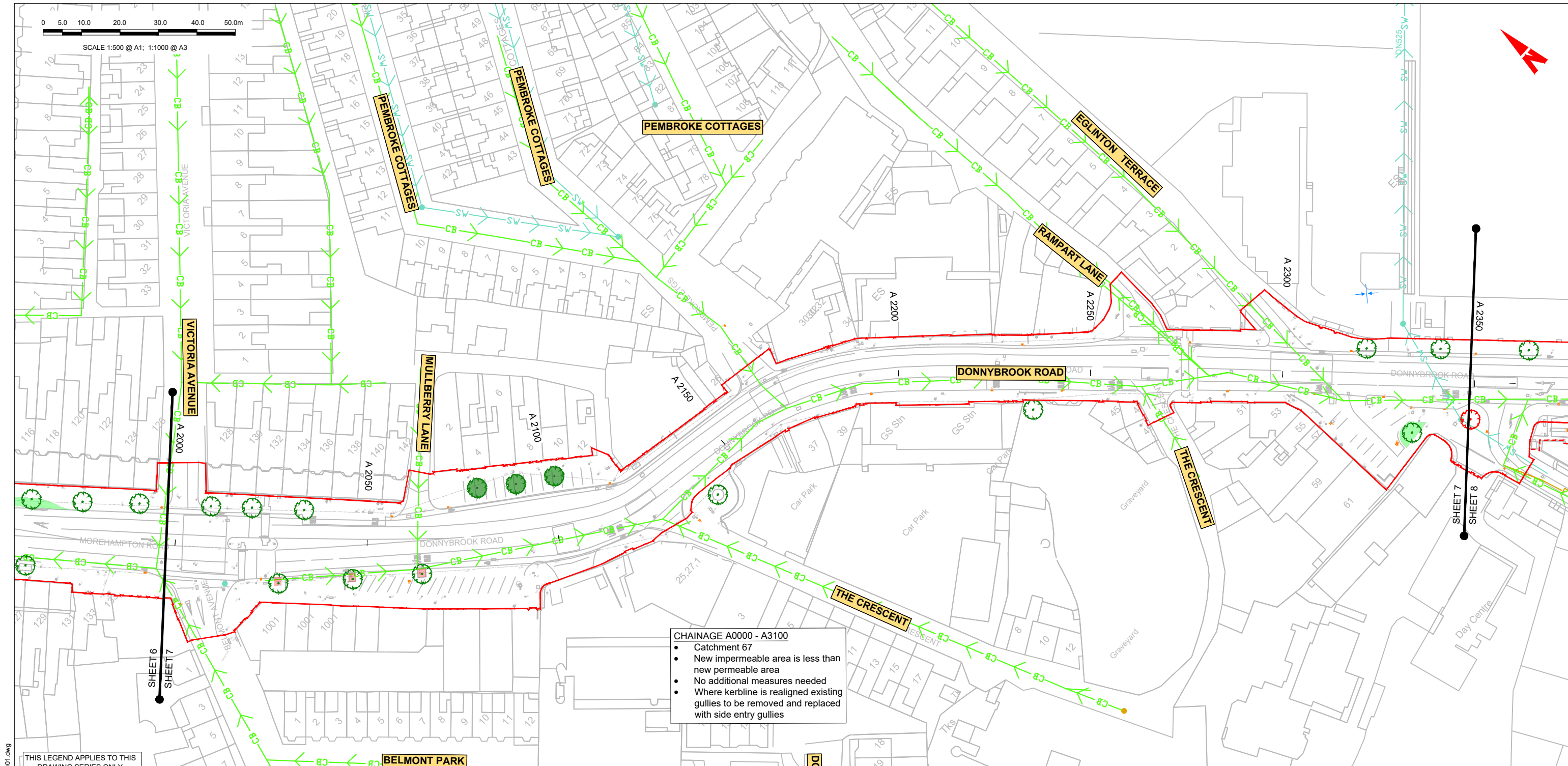
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

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-0006	06 of 54	A	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 = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH = ARCH.

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5. EXISTING DRAINAGE NETWORK BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS MIGHT BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE ALONG THE ROUTE, THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE INFRASTRUCTURE ELEMENT PRESENT ALONG THE ROUTE.
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_{att}: VOLUME OF ATTENUATION

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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 | Drawn: BD | Checked: NS | Approved: RS

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

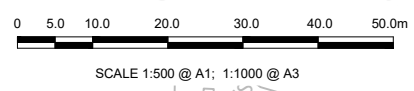
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0007	Sheet Number: 07 of 54	Status: A	Rev: M01

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ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: 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

CHAINAGE A0000 - A3100

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LEGEND:	
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	SURFACE WATER PIPE - UNDER CONSTRUCTION
	PROPOSED STORM WATER PIPE
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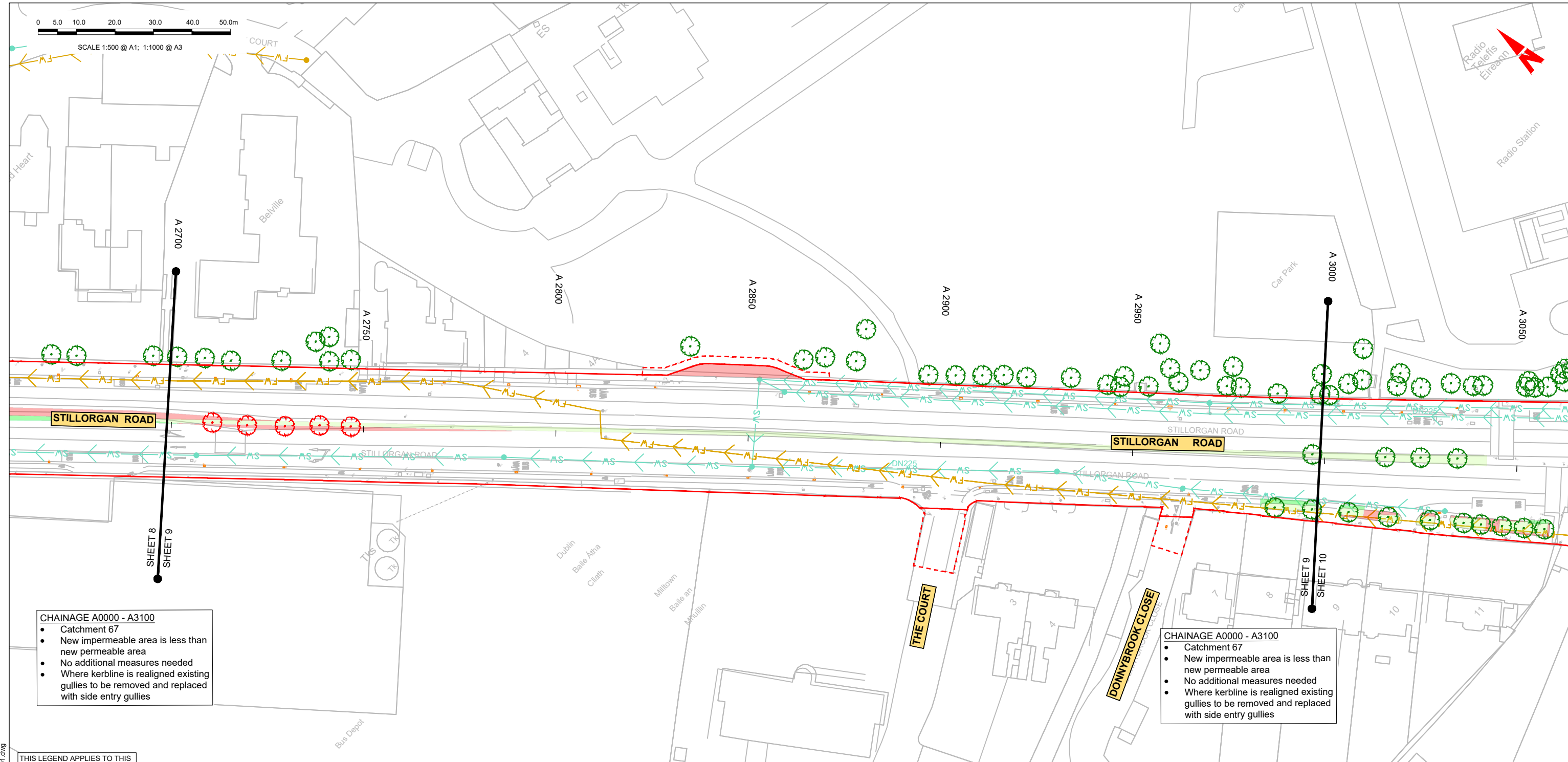
Client: **NTA**
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 National Transport Authority

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			
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-0008	08 of 54	A	M01

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CHAINAGE A0000 - A3100

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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: [blank]

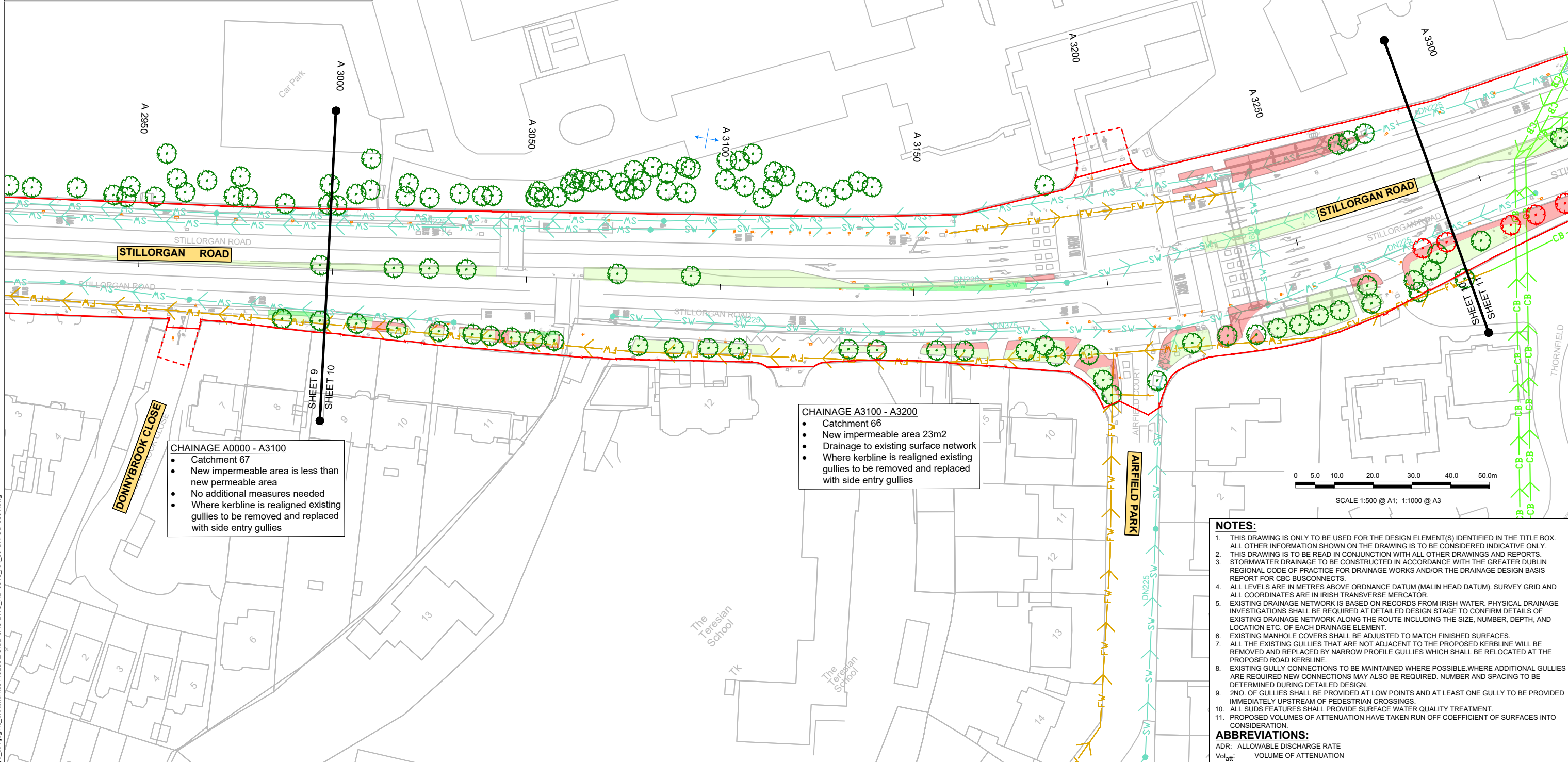
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0009	09 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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 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

- NOTES:**
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 - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
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ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: VOLUME OF ATTENUATION

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Engineering Designer: **Jacobs**

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

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-0010			
Sheet Number	Status	Rev	
10 of 54	A	M01	

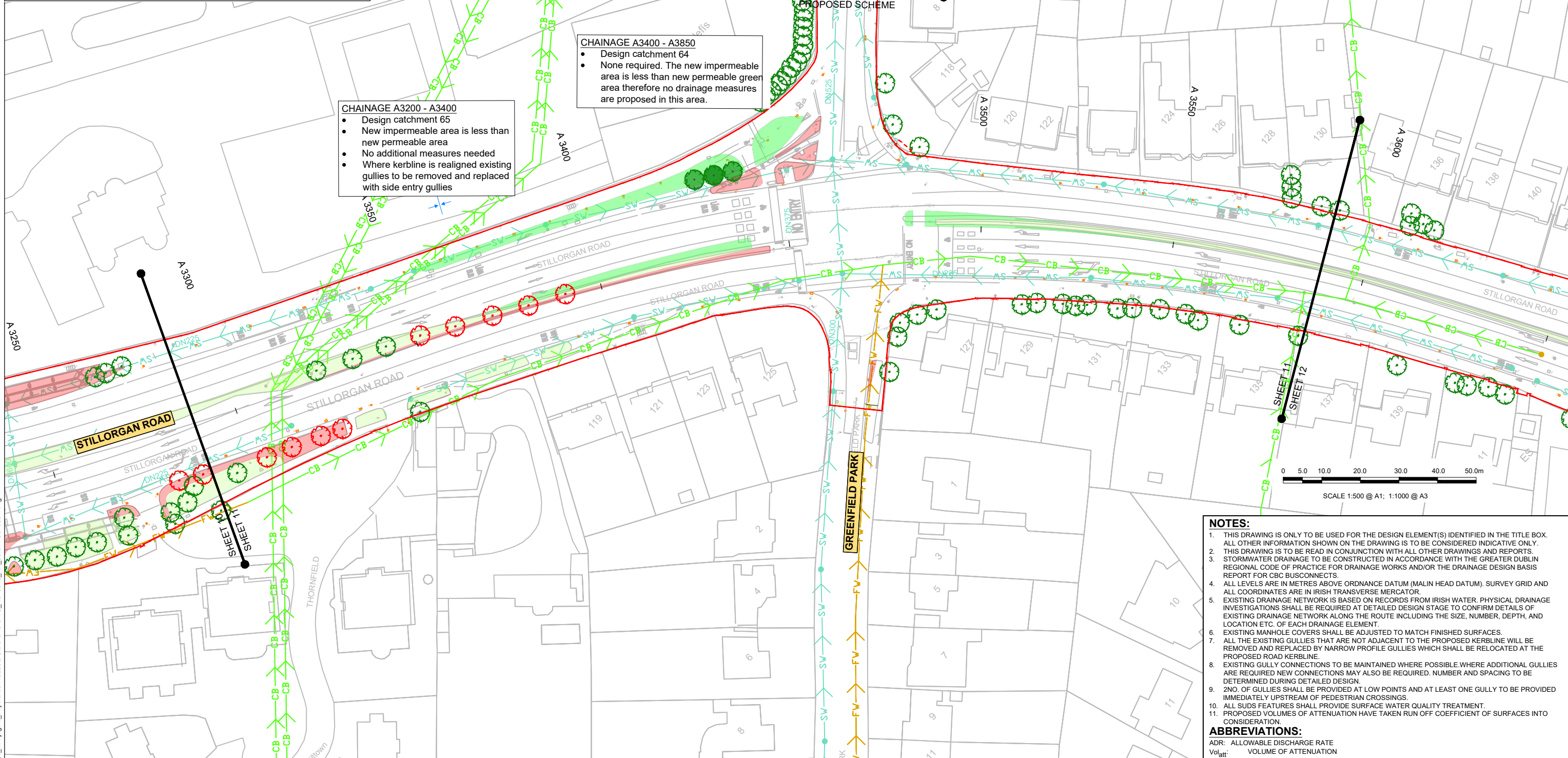
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CHAINAGE A3200 - A3400

- 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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ABBREVIATIONS:

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Vol_{att}: VOLUME OF ATTENUATION

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Project Ireland 2040
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Ódarás Náisiúnta Iompair
National Transport Authority

Engineering Designer: **Jacobs**

Date: 08/05/2023
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1:1000 @ A3

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

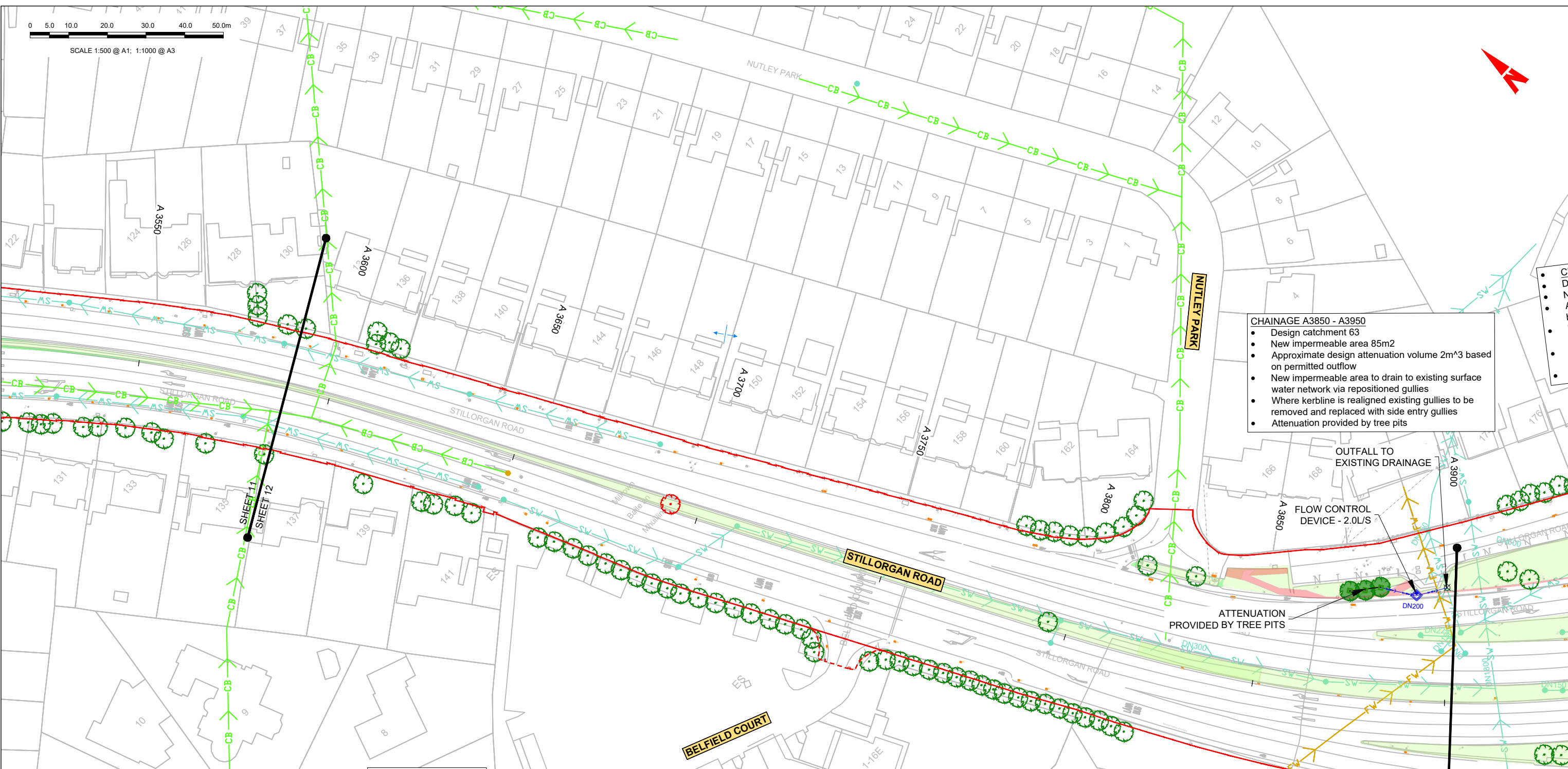
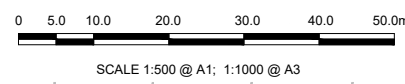
Drawn: BD
Checked: NS
Approved: RS

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 85m²
- Approximate design attenuation volume 2m³ 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:
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 Vol_{att}: 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		

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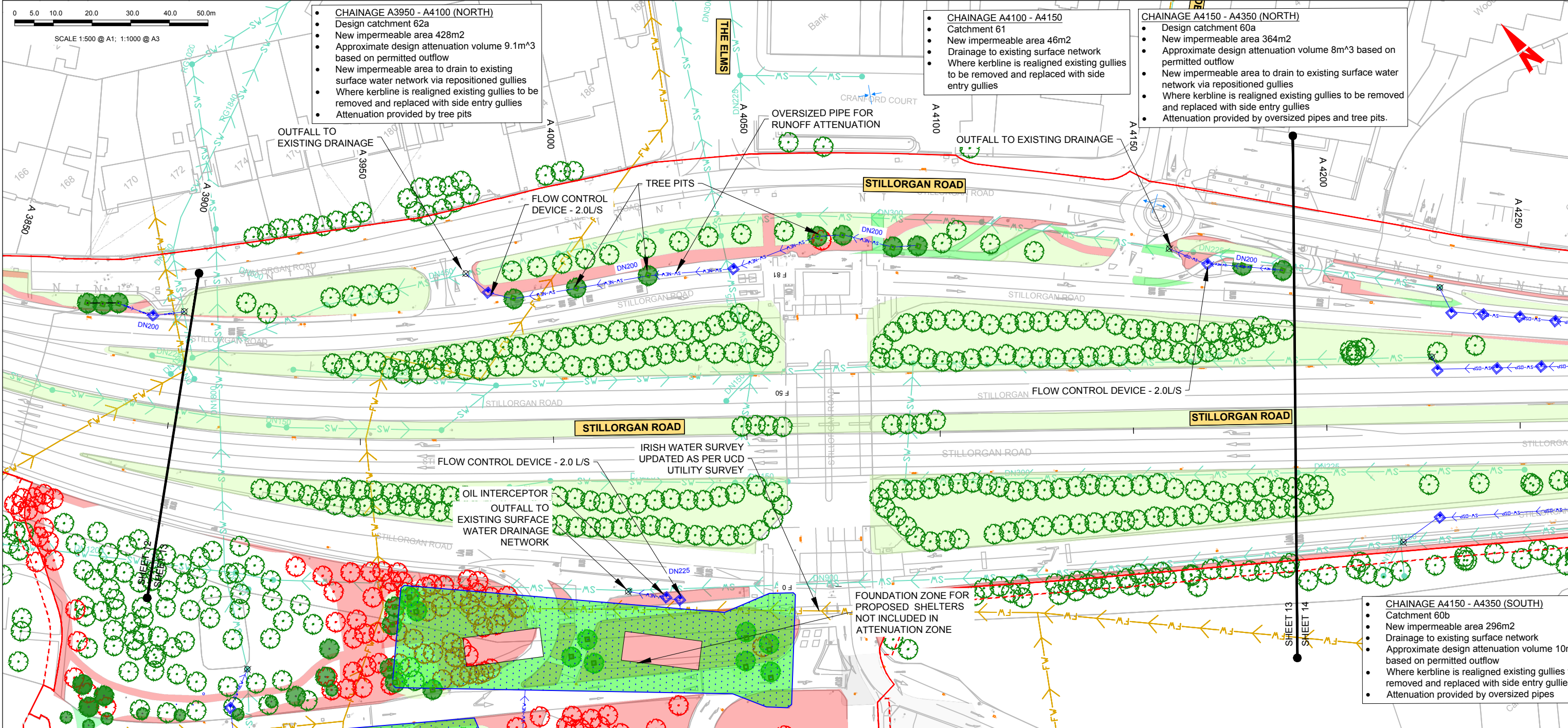
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Engineering Designer: **Jacobs**

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Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title BUSCONNECTS DUBLIN			
Drawing Title CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0012			
Sheet Number	Status	Rev	
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CHAINAGE A3950 - A4100 (NORTH)

- Design catchment 62a
- New impermeable area 428m²
- Approximate design attenuation volume 9.1m³ 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 46m²
- 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 364m²
- Approximate design attenuation volume 8m³ 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 296m²
- Drainage to existing surface network
- Approximate design attenuation volume 10m³ 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 4291m²
- Approximate design attenuation volume 330m³ 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 265m³, 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

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	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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12. ALL CAPPING DEPTHS AND ASSOCIATED Vol_{att} ARE SUBJECT TO CONFIRMATION AT DETAILED DESIGN FOLLOWING COMPLETION OF FURTHER SITE SURVEY AND INVESTIGATION WORK.

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

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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			
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-0013	13 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

CHAINAGE A4150 - A4350 (NORTH)

- Design catchment 60a
- New impermeable area 364m²
- Approximate design attenuation volume 8m³ 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 678m²
- Approximate design attenuation volume 20m³ 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 240m²
- 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 296m²
- Drainage to existing surface network
- Approximate design attenuation volume 10m³ 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		

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

 Údarás Náisiúnta Iompair National Transport Authority	Client			
	Engineering Designer			
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		

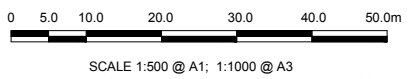
Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0014	Sheet Number: 14 of 54	Status: A	Rev: M01

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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.

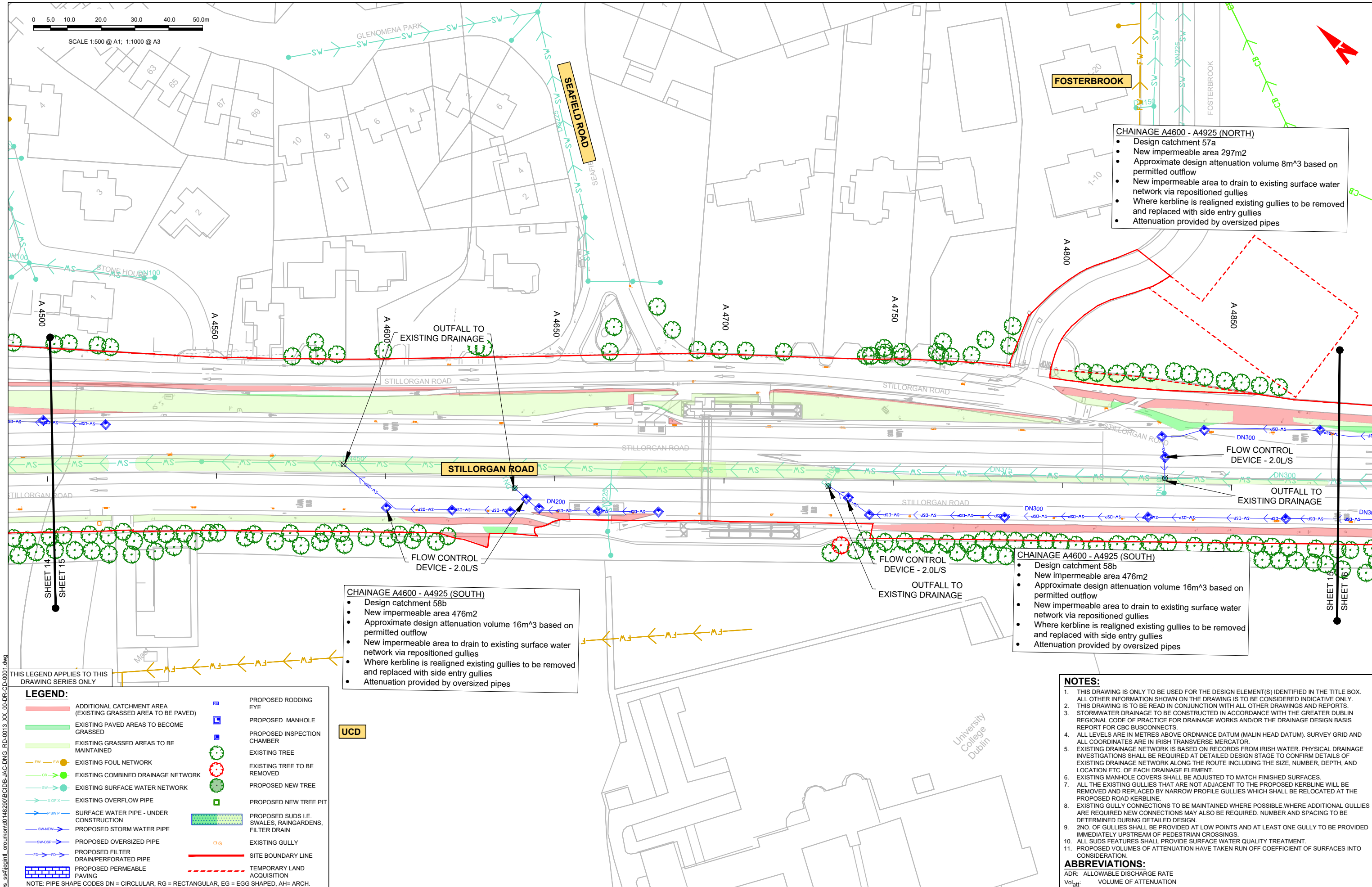
ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
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CHAINAGE A4600 - A4925 (NORTH)

- Design catchment 57a
- New impermeable area 297m²
- Approximate design attenuation volume 8m³ 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 476m²
- Approximate design attenuation volume 16m³ 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 476m²
- Approximate design attenuation volume 16m³ 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:

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

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<p>Project Code</p> <p>BCIDB</p>		<p>Originator Code</p> <p>JAC</p>		<p>OMS Code</p>		<p>Drawing File Name</p> <p>BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0015</p>		<p>Sheet Number</p> <p>15 of 54</p>		<p>Status</p> <p>A</p>													
										<p>Rev</p> <p>M01</p>													

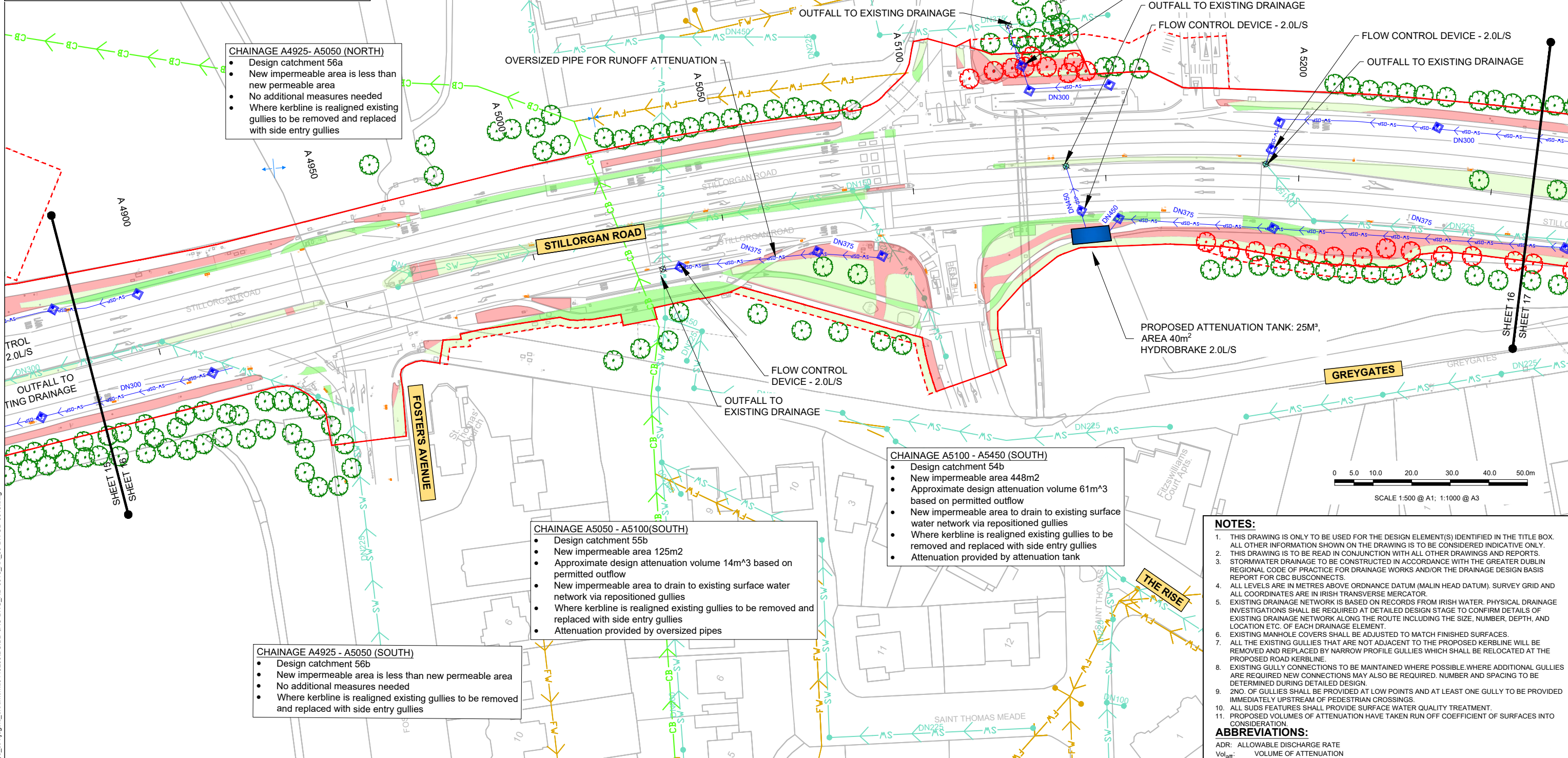
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LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
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	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
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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 313m²
- Approximate design attenuation volume 8m³ 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)

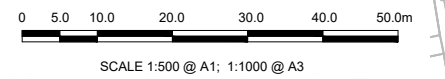
- Design catchment 54b
- New impermeable area 448m²
- Approximate design attenuation volume 61m³ based on permitted outflow
- New impermeable area to drain to existing surface water network via repositioned gullies
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by attenuation tank

CHAINAGE A5050 - A5100(SOUTH)

- Design catchment 55b
- New impermeable area 125m²
- Approximate design attenuation volume 14m³ 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
- No additional measures needed
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ABBREVIATIONS:

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

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Project Ireland 2040
Building Ireland's Future

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

Engineering Designer: **Jacobs**

Date: 08/05/2023
Scale: 1:500 @ A1
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Drawn: BD
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Approved: RS

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Programme Title		Drawing Title	
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BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0016	16 of 54	A	M01

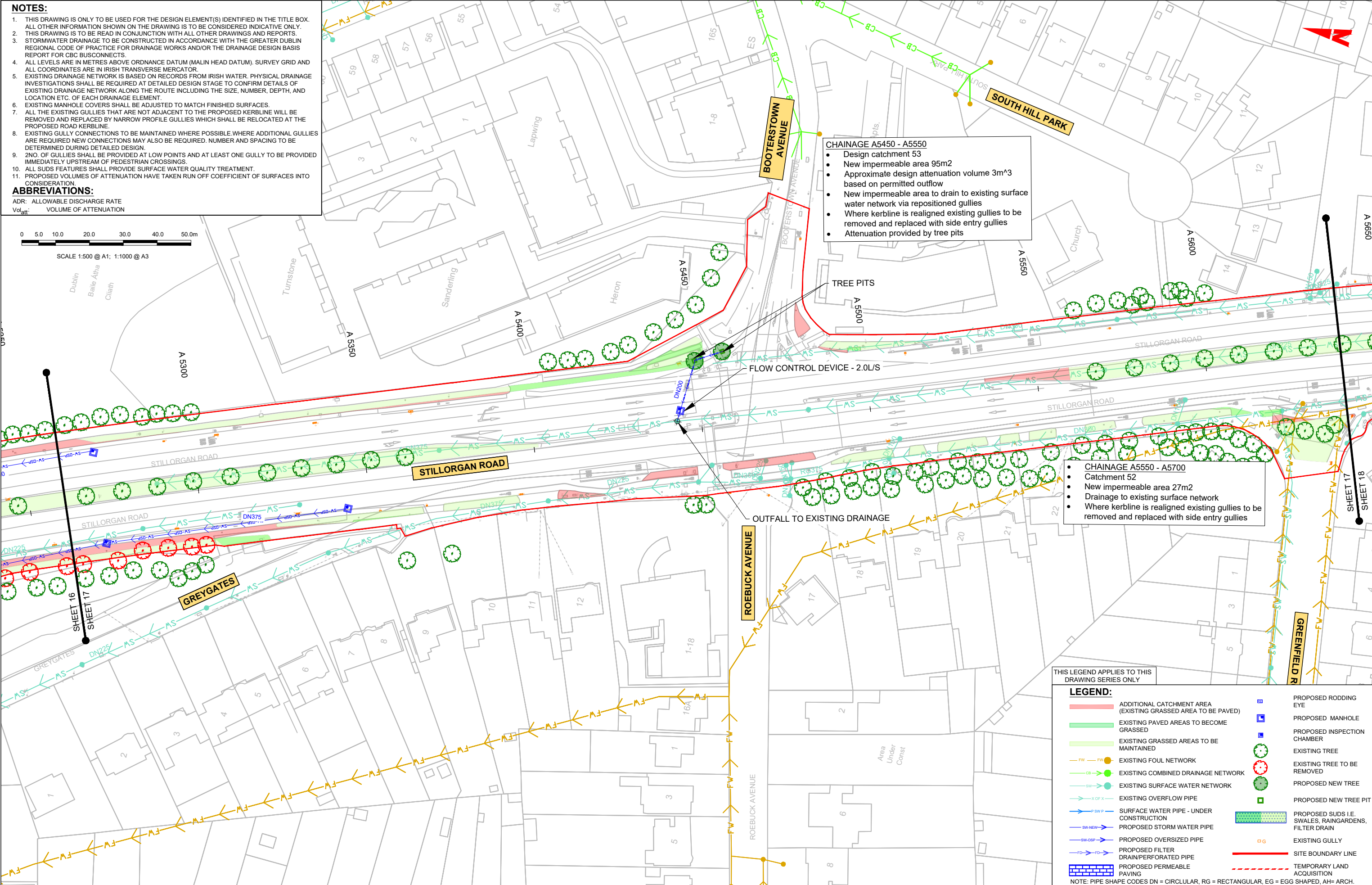
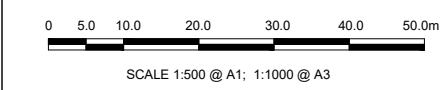
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- ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
- PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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



CHAINAGE A5450 - A5550

- Design catchment 53
- New impermeable area 95m²
- Approximate design attenuation volume 3m³ 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 A5550 - A5700

- Catchment 52
- New impermeable area 27m²
- 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
	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	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS

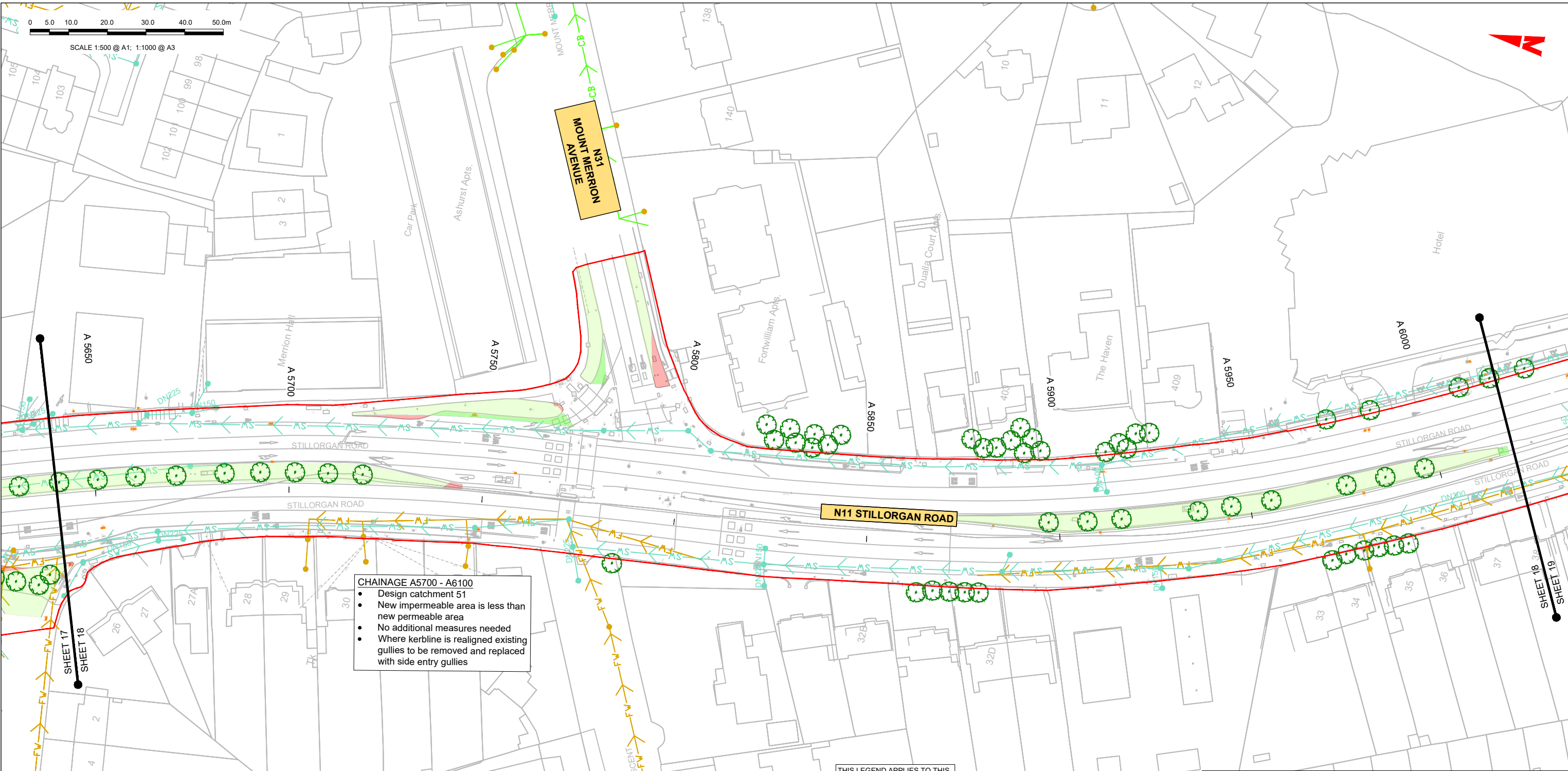
Project Code: BCIDB | Originator Code: JAC | OMS Code:

Programme Title: **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
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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
	PROPOSED PERMEABLE PAVING		EGG SHAPED, AH= ARCH.

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

Engineering Designer: **Jacobs**

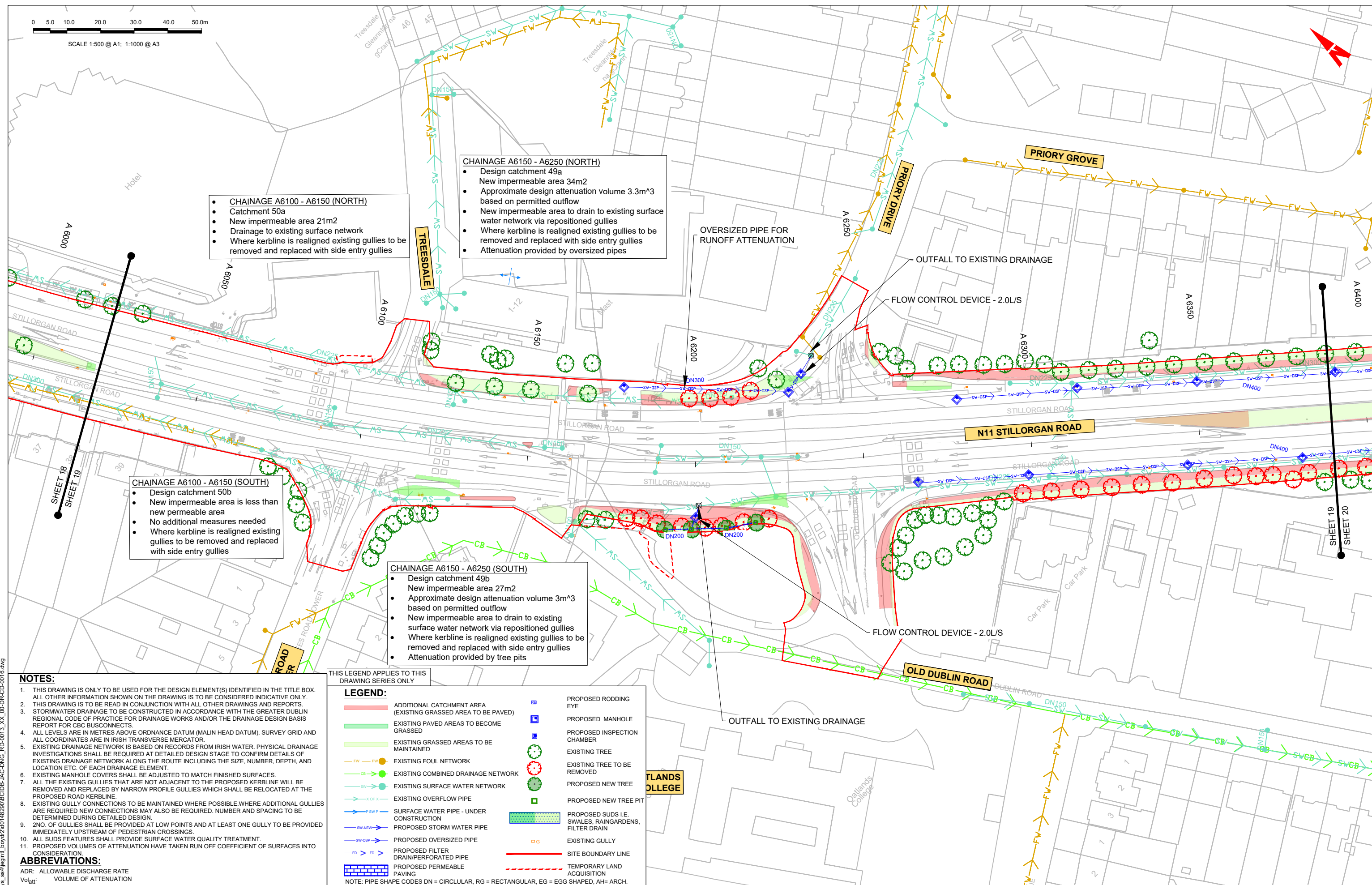
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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-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 21m²
- Drainage to existing surface network
- Where kerblines is realigned existing gullies to be removed and replaced with side entry gullies

CHAINAGE A6150 - A6250 (NORTH)

- Design catchment 49a
- New impermeable area 34m²
- Approximate design attenuation volume 3.3m³ 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 A6100 - A6150 (SOUTH)

- Design catchment 50b
- 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

CHAINAGE A6150 - A6250 (SOUTH)

- Design catchment 49b
- New impermeable area 27m²
- Approximate design attenuation volume 3m³ 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 tree pits

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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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	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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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: 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 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_{att}: VOLUME OF ATTENUATION

CHAINAGE A6250 - A6550 (NORTH)

- Design catchment 48a
- New impermeable area 602m²
- Approximate design attenuation volume 20m³ 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 479m²
- Approximate design attenuation volume 14m³ 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 170m²
- Approximate design attenuation volume 8.2m³ 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 626m²
- Approximate design attenuation volume 22m³ 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

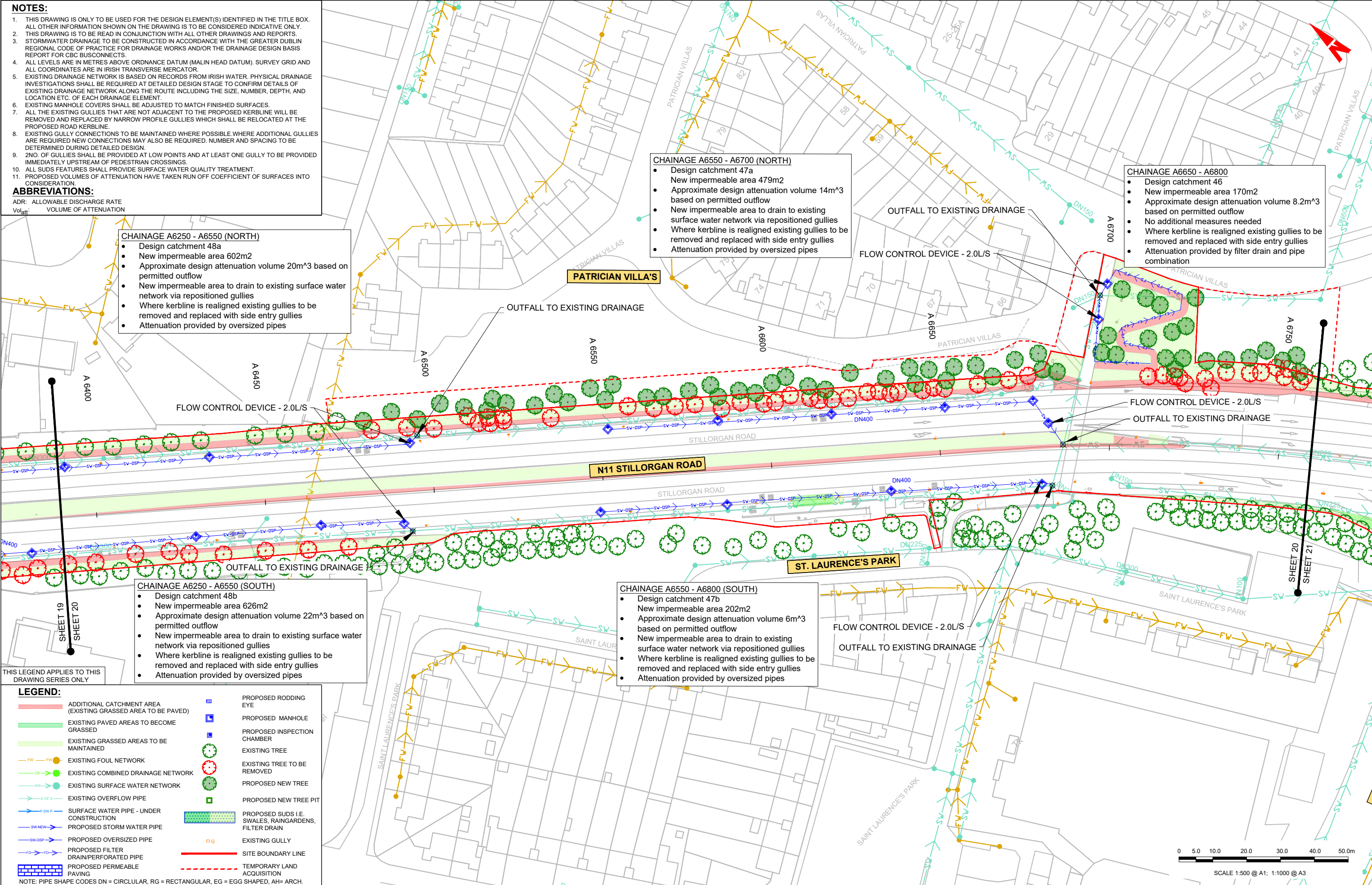
CHAINAGE A6550 - A6800 (SOUTH)

- Design catchment 47b
- New impermeable area 202m²
- Approximate design attenuation volume 6m³ 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:

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



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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

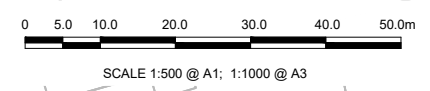
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ABBREVIATIONS:

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



CHAINAGE A6850 - A7150 (NORTH)

- Design catchment 44b
- New impermeable area 733m²
- Approximate design attenuation volume 24m³ 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 267m²
- Approximate design attenuation volume 17m³ 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

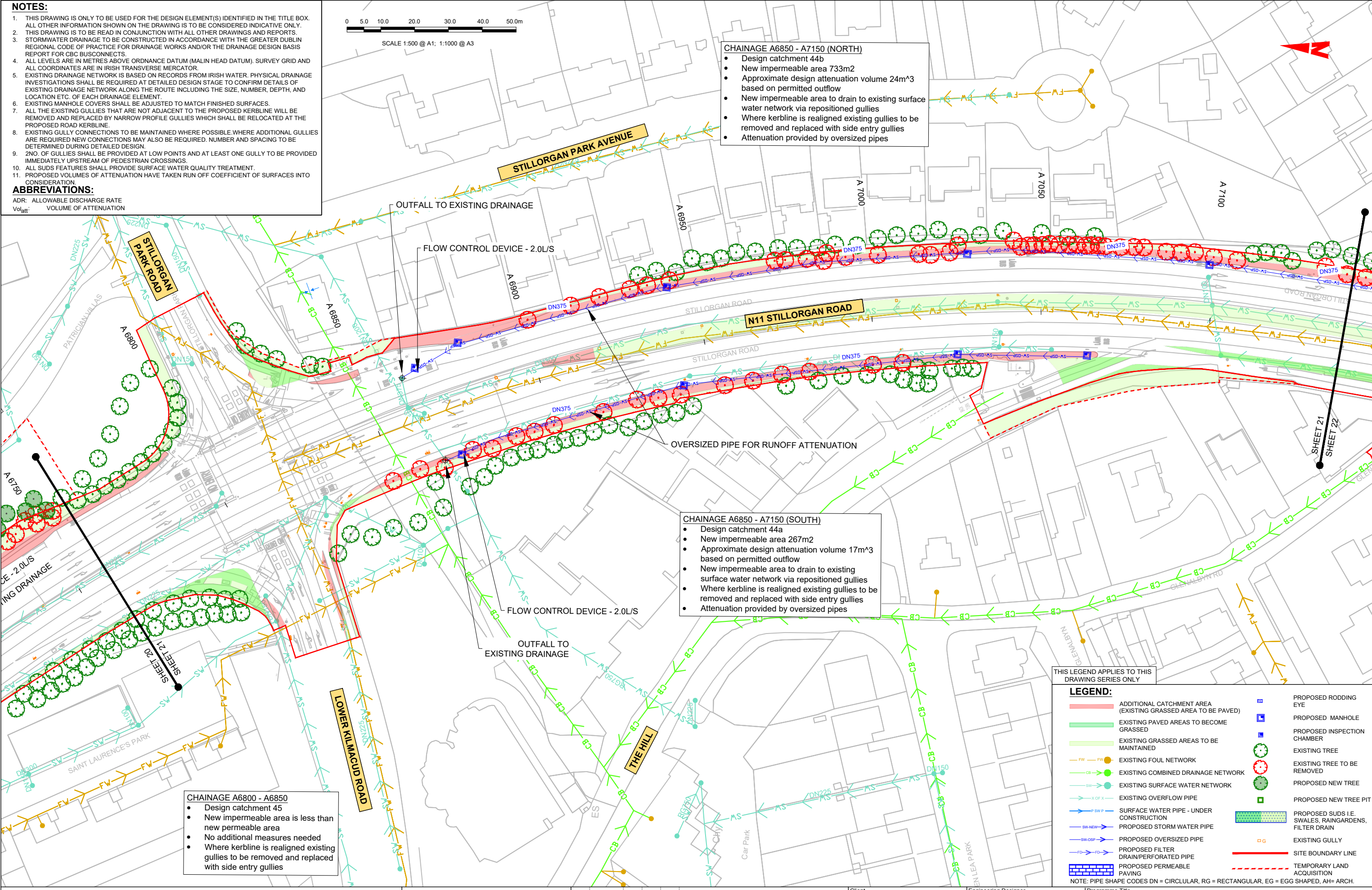
CHAINAGE A6800 - A6850

- 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

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		SITE BOUNDARY LINE
	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
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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 | Drawn: BD | Checked: NS | Approved: RS

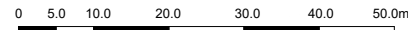
Project Code: BCIDB | Originator Code: JAC | OMS Code:

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

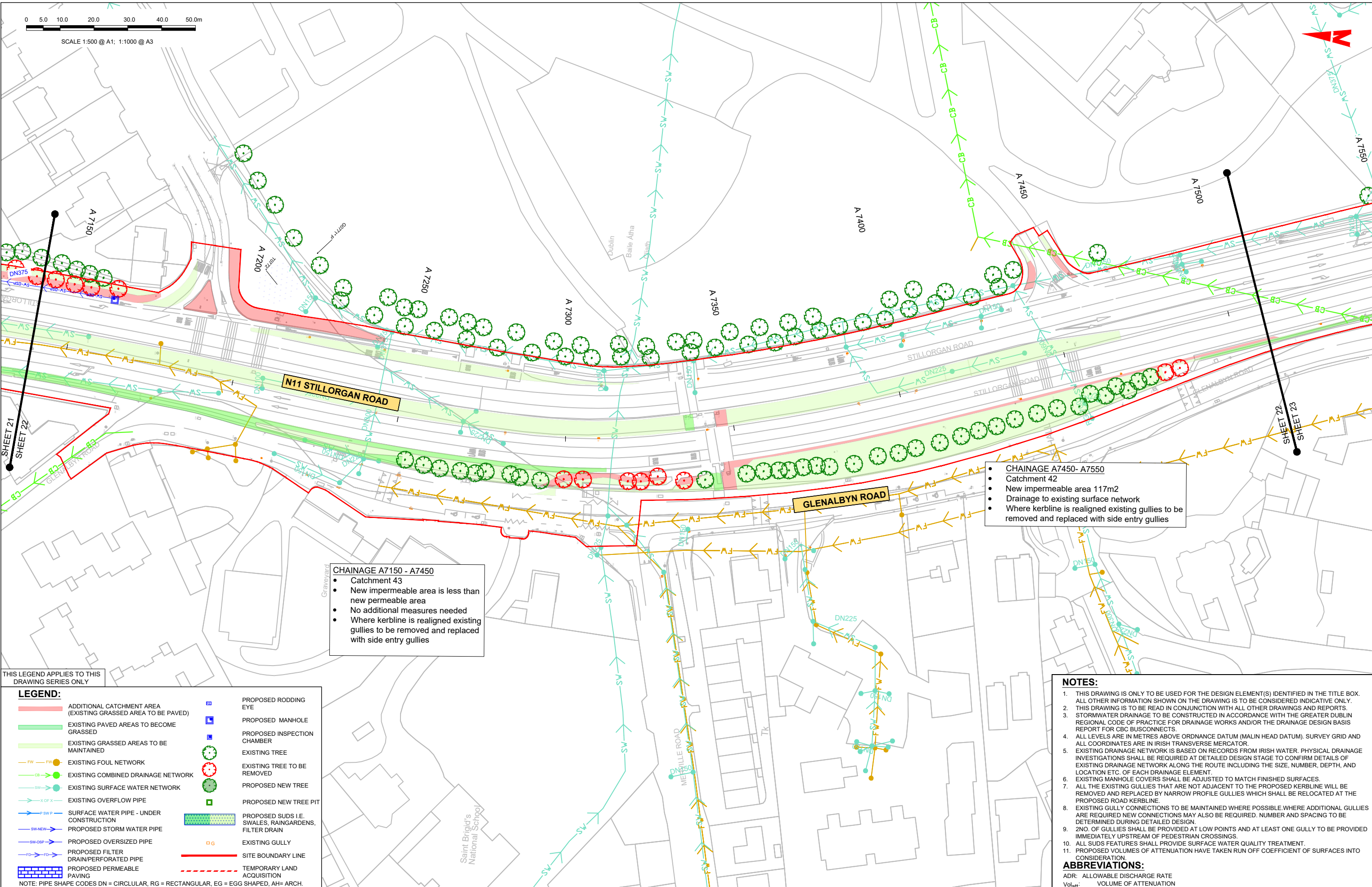
Drawing Title: **BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS**

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 117m²
- 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:

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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
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ABBREVIATIONS:

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Vol_{att}: VOLUME OF ATTENUATION

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

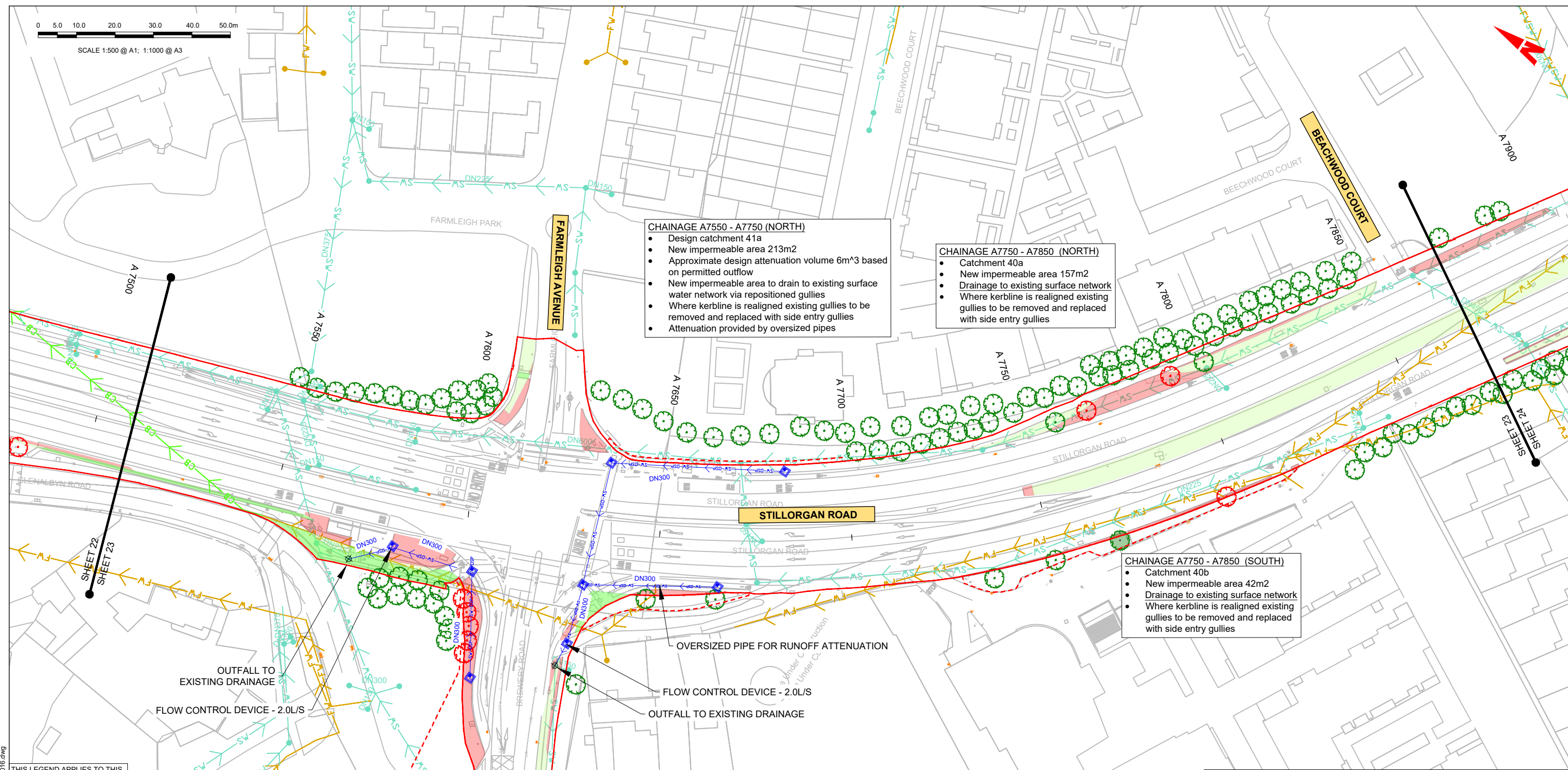
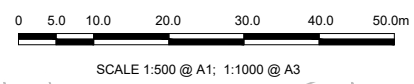
Engineering Designer: **Jacobs**

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-0022	22 of 54	A	M01

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CHAINAGE A7550 - A7750 (NORTH)

- Design catchment 41a
- New impermeable area 213m²
- Approximate design attenuation volume 6m³ 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 157m²
- 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 42m²
- 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 166m²
- Approximate design attenuation volume 9.1m³ 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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	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
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Client: **NTA**
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National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
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Programme Title	BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS		
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BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0023	23 of 54	A	M01

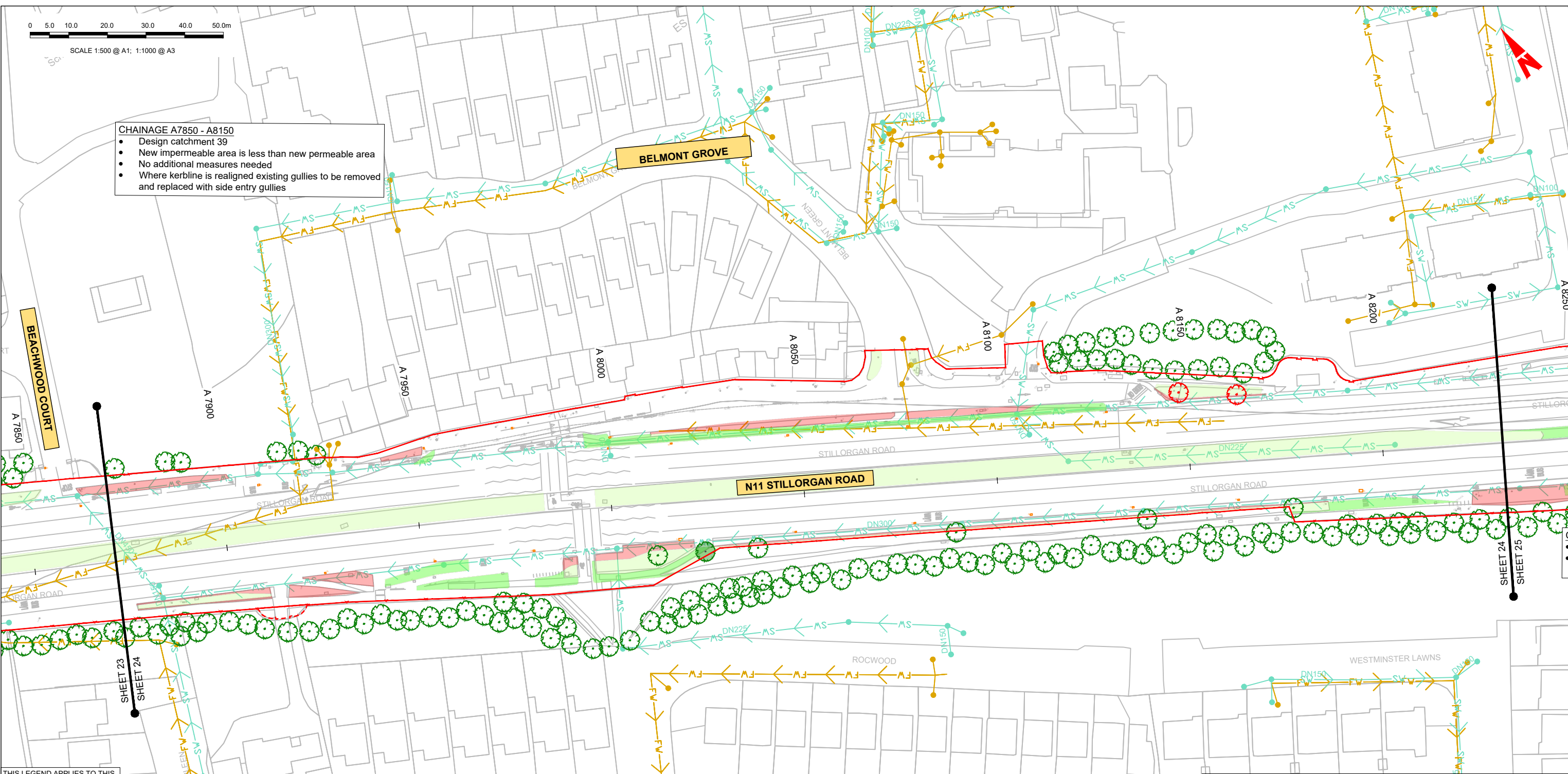
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0 5.0 10.0 20.0 30.0 40.0 50.0m

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



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LEGEND:

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	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
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	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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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: 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**

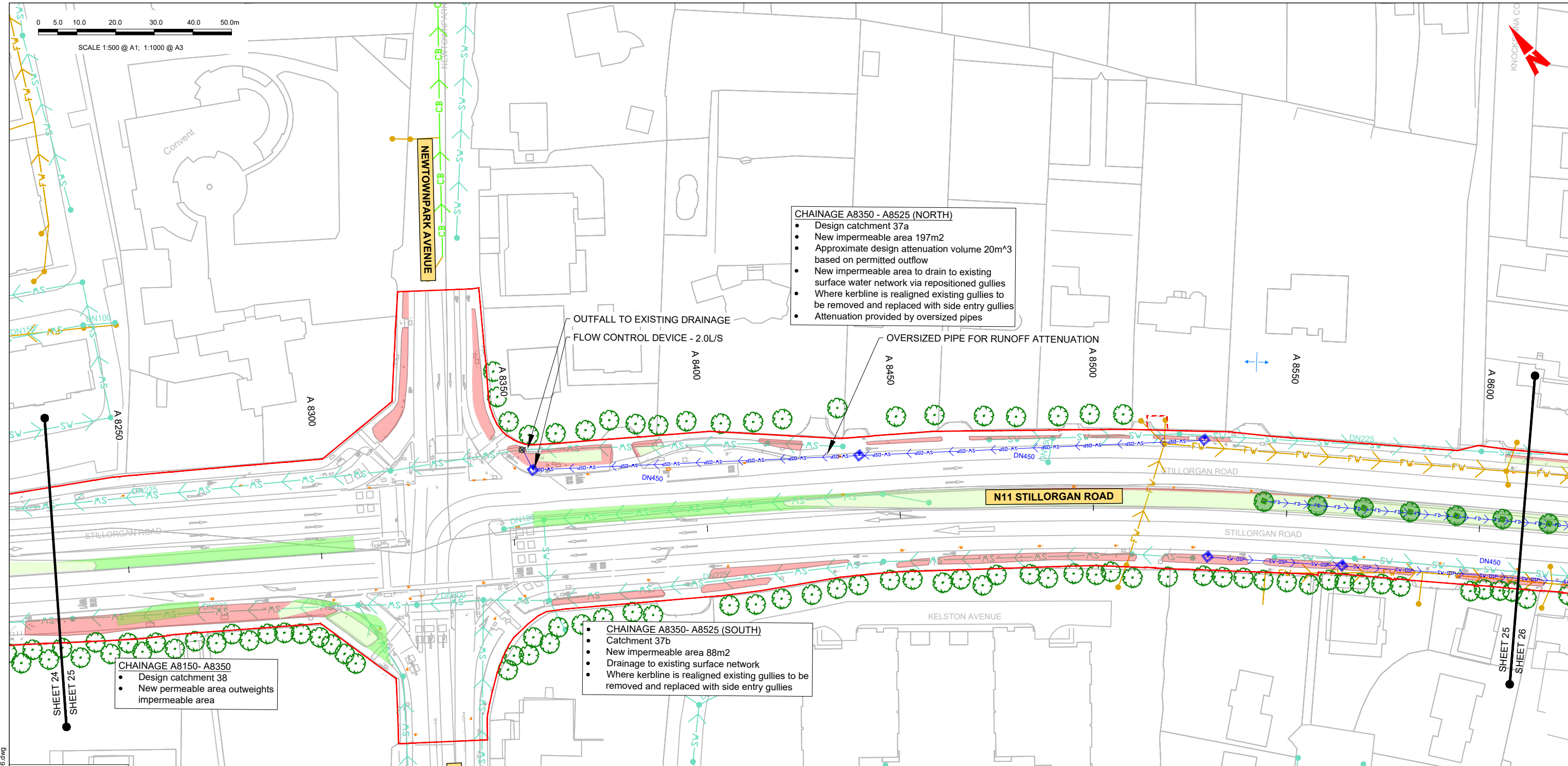
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title: **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-0024	24 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



CHAINAGE A8350 - A8525 (NORTH)

- Design catchment 37a
- New impermeable area 197m²
- Approximate design attenuation volume 20m³ 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 88m²
- 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.

NOTES:

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4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
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ABBREVIATIONS:

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	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 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-0025	Sheet Number 25 of 54	Status A	Rev M01

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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 1344m²
- Approximate design attenuation volume 60m³ 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

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- New impermeable area 1344m²
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	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
	EXISTING PAVED AREAS TO BECOME GRASSED
	EXISTING GRASSED AREAS TO BE MAINTAINED
	EXISTING FOUL NETWORK
	EXISTING COMBINED DRAINAGE NETWORK
	EXISTING SURFACE WATER NETWORK
	EXISTING OVERFLOW PIPE
	SURFACE WATER PIPE - UNDER CONSTRUCTION
	PROPOSED STORM WATER PIPE
	PROPOSED OVERSIZED PIPE
	PROPOSED FILTER DRAIN/PERFORATED PIPE
	PROPOSED PERMEABLE PAVING
	PROPOSED RODDING EYE
	PROPOSED MANHOLE
	PROPOSED INSPECTION CHAMBER
	EXISTING TREE
	EXISTING TREE TO BE REMOVED
	PROPOSED NEW TREE
	PROPOSED NEW TREE PIT
	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	EXISTING GULLY
	SITE BOUNDARY LINE
	TEMPORARY LAND ACQUISITION

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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			

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ABBREVIATIONS:

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

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-0026	26 of 54	A	M01

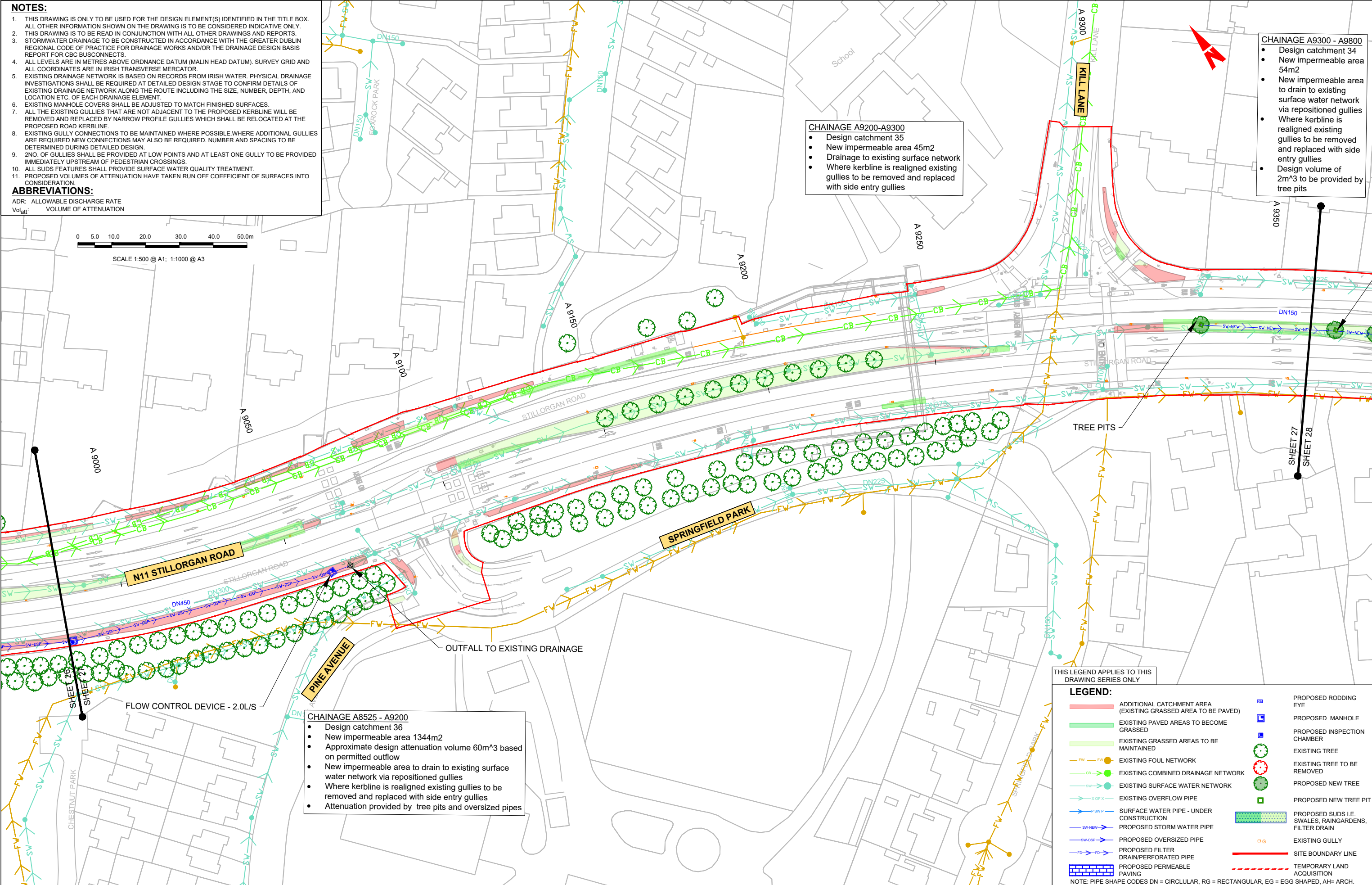
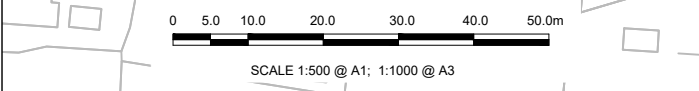
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ABBREVIATIONS:

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



CHAINAGE A9200-A9300

- Design catchment 35
- New impermeable area 45m²
- 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 54m²
- 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 2m³ to be provided by tree pits

CHAINAGE A8525 - A9200

- Design catchment 36
- New impermeable area 1344m²
- Approximate design attenuation volume 60m³ 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

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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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: BUSCONNECTS DUBLIN			
Drawing Title: CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0027			
Sheet Number: 27 of 54	Status: A	Rev: M01	

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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 54m²
- 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 2m³ to be provided by tree pits

- CHAINAGE A9300 - A9800
- Design catchment 34
- New impermeable area 178m²
- Approximate design attenuation volume 8.1m³ 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 91m²
- 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
	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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5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
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10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

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

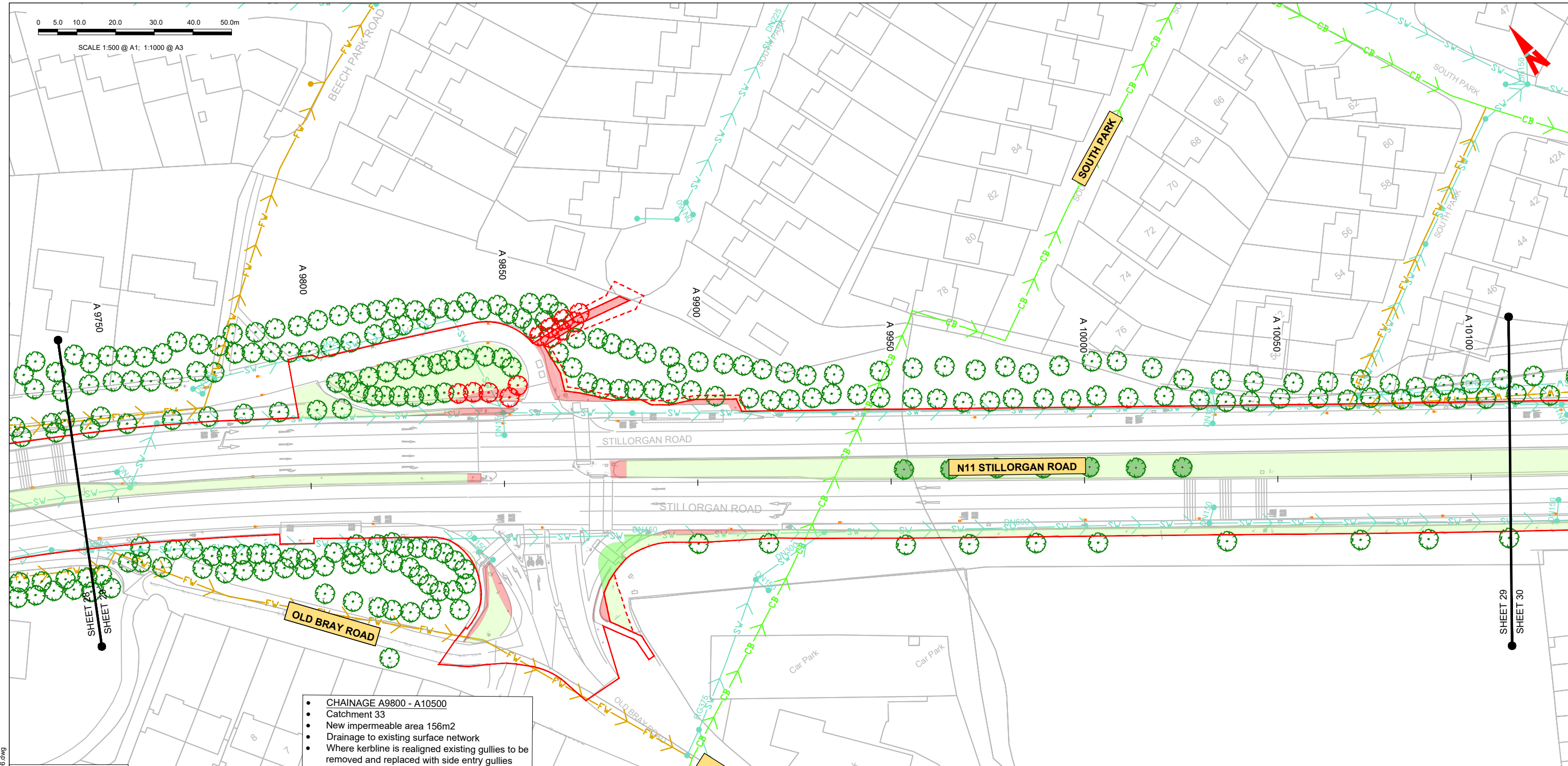
Client: **NTA**
 Ódarás Náisiúnta Iompair
 National Transport Authority

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
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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.

- CHAINAGE A9800 - A10500
- Catchment 33
- New impermeable area 156m2
- Drainage to existing surface network
- Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

NOTES:

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ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
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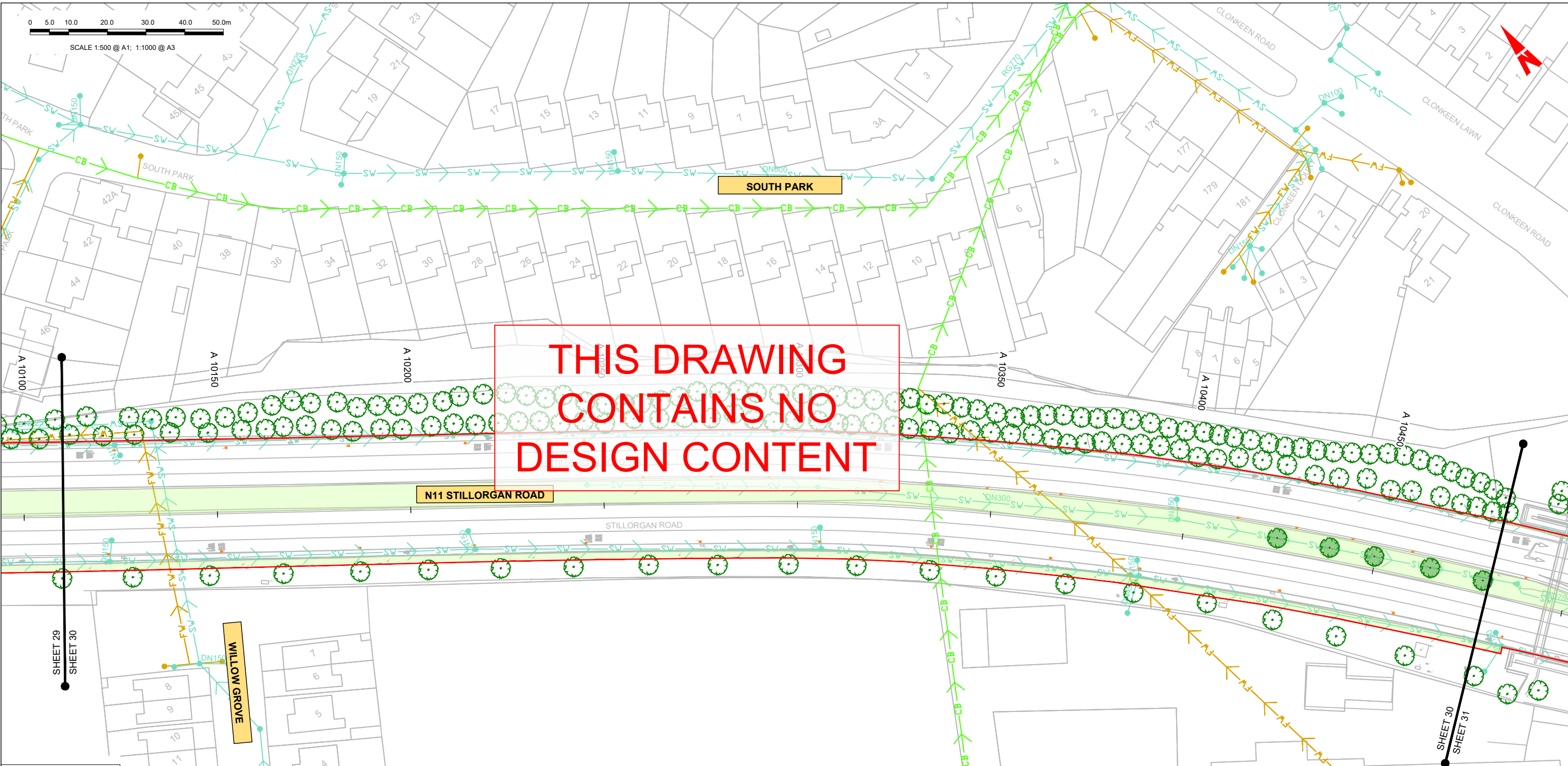
Client: **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
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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	
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THIS DRAWING
CONTAINS NO
DESIGN CONTENT

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
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	EXISTING FOUL NETWORK		EXISTING TREE
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	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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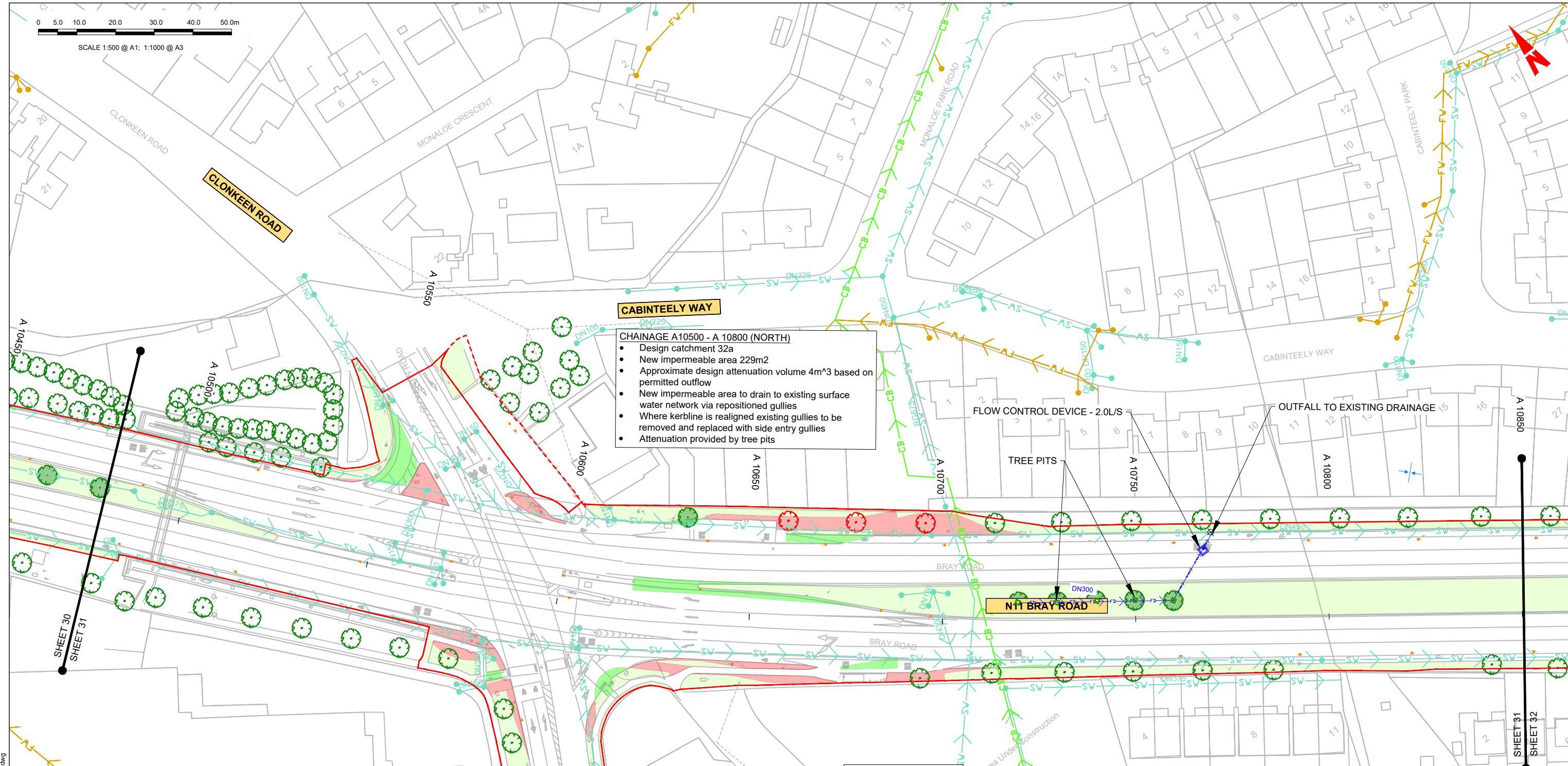
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ABBREVIATIONS:

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

<p>Project Ireland 2040 Building Ireland's Future</p>	<p>Rev Date Dm Chk'd App'd Description</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Rev</td> <td>Date</td> <td>Dm</td> <td>Chk'd</td> <td>App'd</td> <td>Description</td> </tr> <tr> <td>M01</td> <td>08/05/2023</td> <td>BD</td> <td>NS</td> <td>RS</td> <td>ISSUE FOR PHASE 4: PLANNING</td> </tr> </table>	Rev	Date	Dm	Chk'd	App'd	Description	M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING	<p>Client: NTA Údarás Náisiúnta Iompair National Transport Authority</p>	<p>Engineering Designer: Jacobs</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Date</td> <td>Scale</td> <td>Drawn</td> <td>Checked</td> <td>Approved</td> </tr> <tr> <td>08/05/2023</td> <td>1:500 @ A1 1:1000 @ A3</td> <td>BD</td> <td>NS</td> <td>RS</td> </tr> <tr> <td>Project Code</td> <td>Originator Code</td> <td>QMS Code</td> <td colspan="2"></td> </tr> <tr> <td>BCIDB</td> <td>JAC</td> <td></td> <td colspan="2"></td> </tr> </table>	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				<p>Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p> <p>Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Drawing File Name</td> <td>Sheet Number</td> <td>Status</td> <td>Rev</td> </tr> <tr> <td>BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0030</td> <td>30 of 54</td> <td>A</td> <td>M01</td> </tr> </table>	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 229m²
- Approximate design attenuation volume 4m³ 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 A10500 - A10800 (SOUTH)

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

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
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	PROPOSED STORM WATER PIPE		EXISTING GULLY
	PROPOSED OVERSIZED PIPE		SITE BOUNDARY LINE
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- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE
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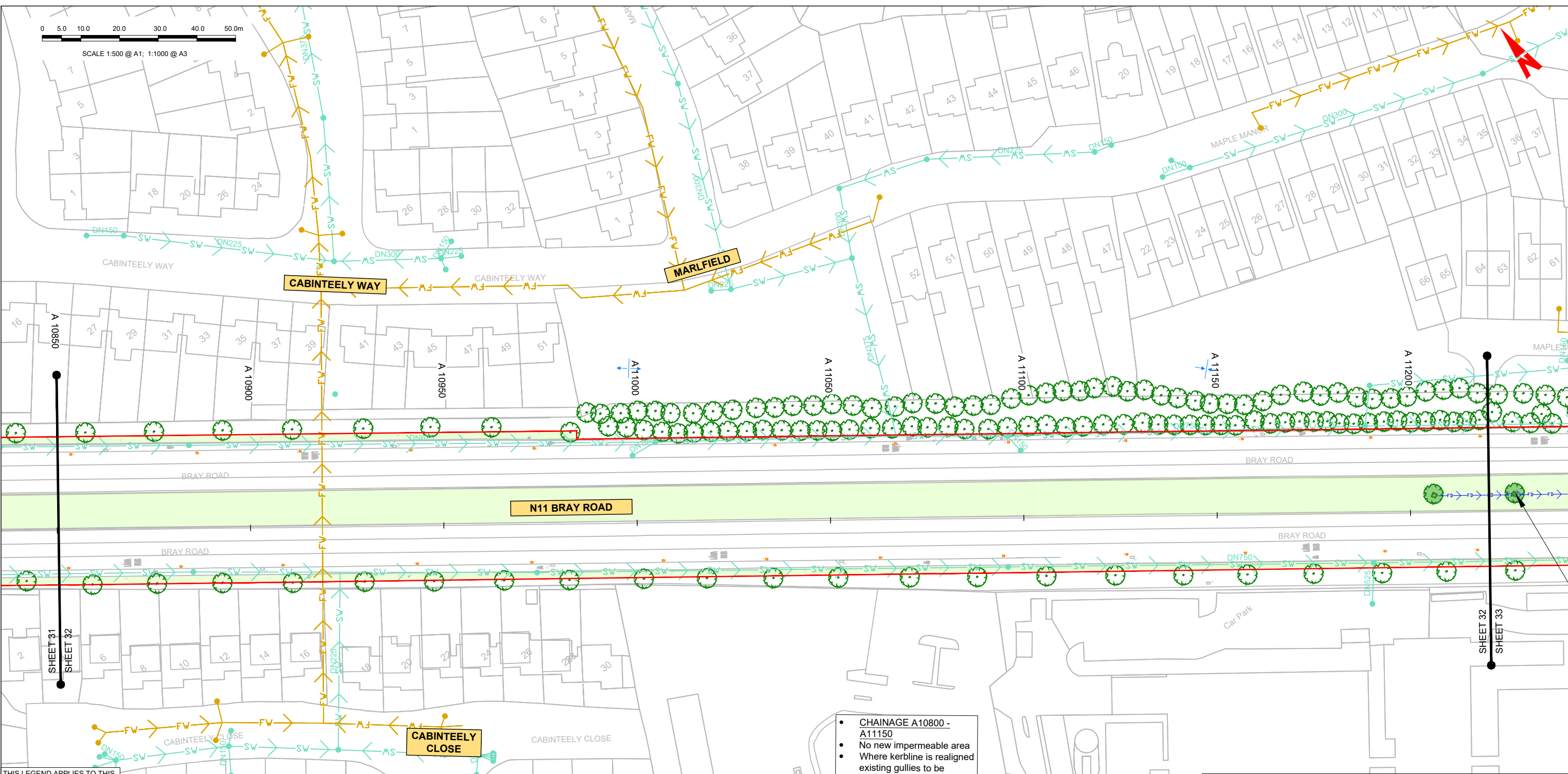
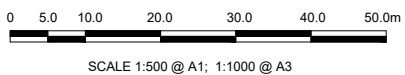
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Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0031	31 of 54	A	M01

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

ABBREVIATIONS:

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

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Rev	Date	Drn	Chk'd	App'd	Description
M01	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-0032	32 of 54	A	M01

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ABBREVIATIONS:

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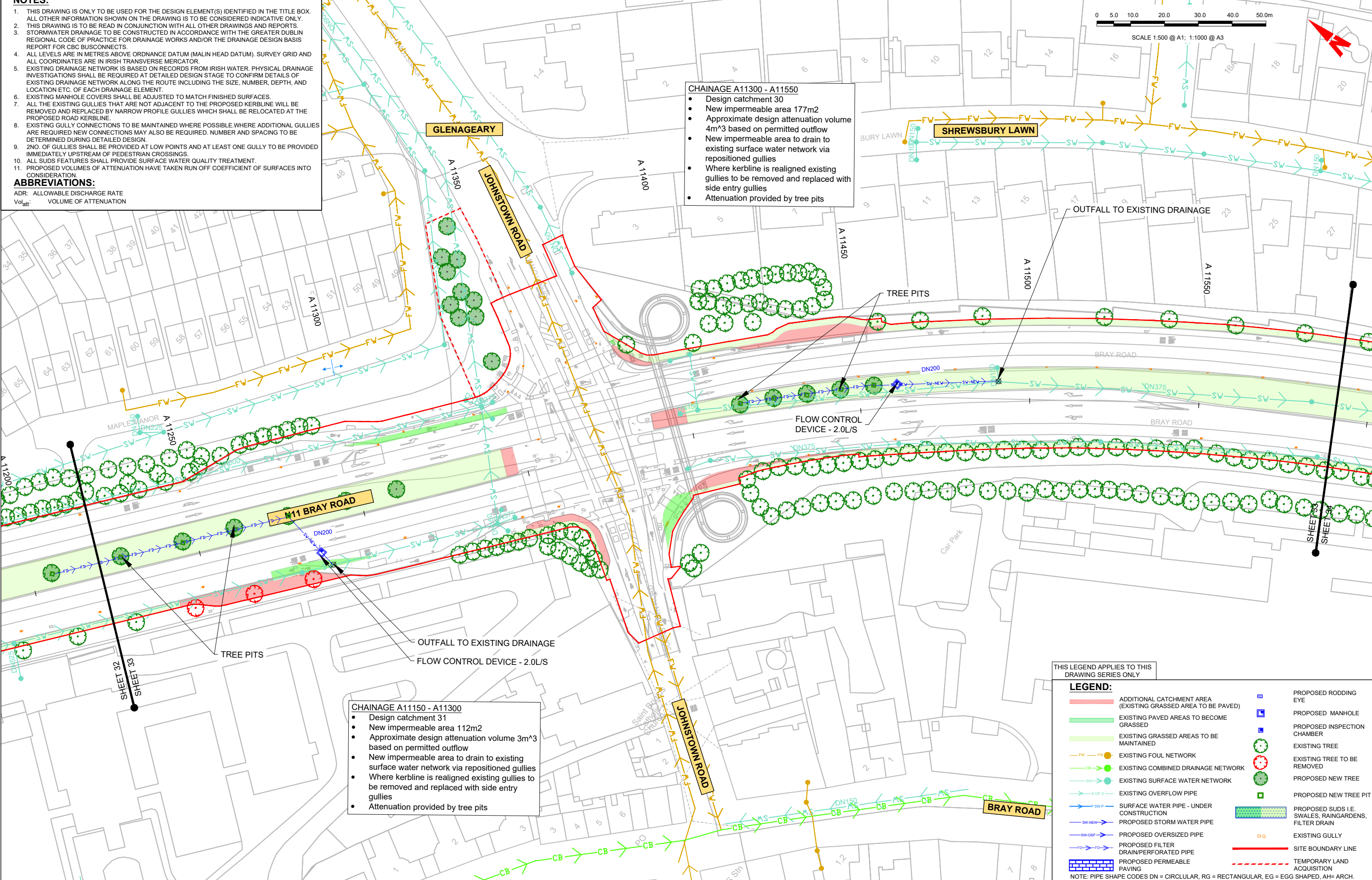


CHAINAGE A11300 - A11550

- Design catchment 30
- New impermeable area 177m²
- Approximate design attenuation volume 4m³ 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 112m²
- Approximate design attenuation volume 3m³ 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		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	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 BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0033	Sheet Number 33 of 54	Status A	Rev M01

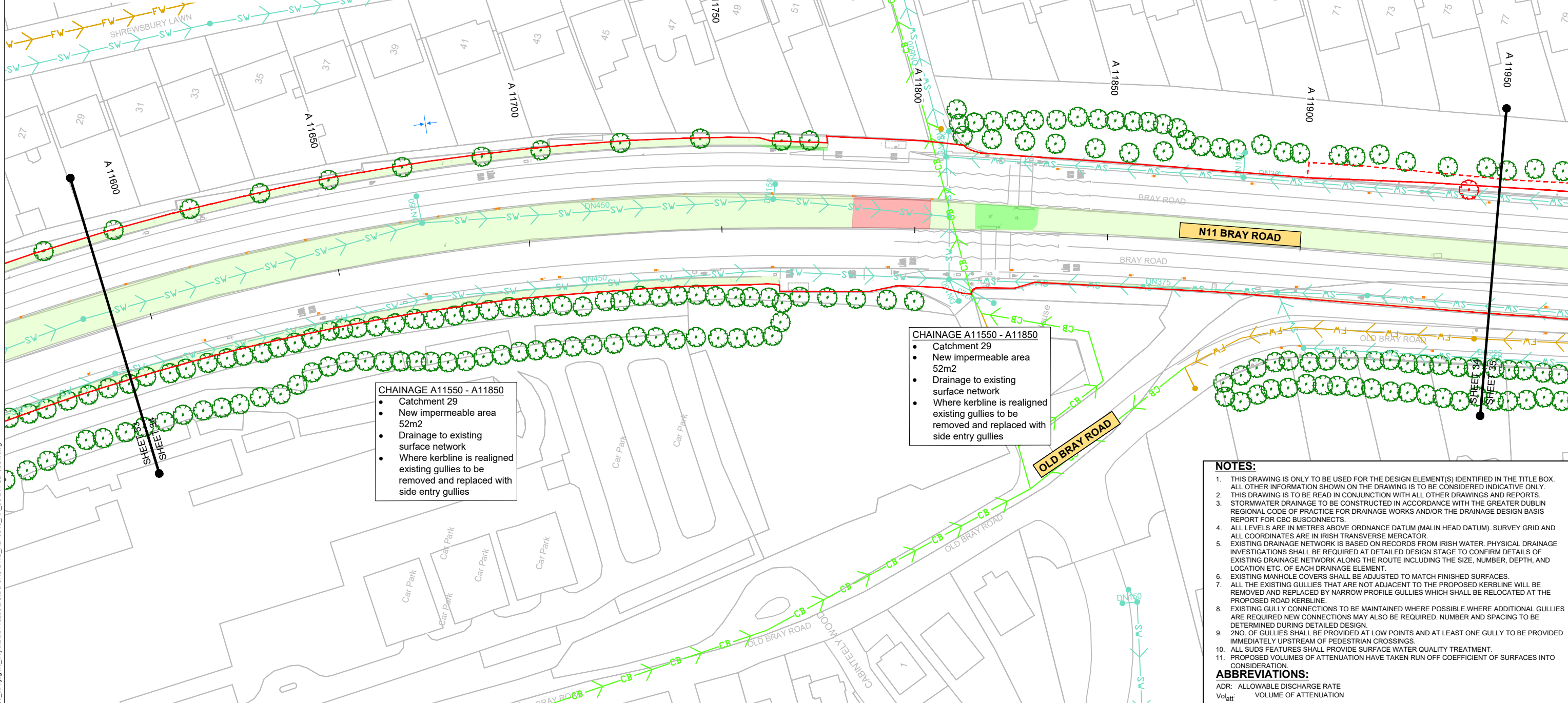
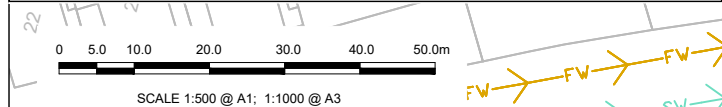
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	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING SURFACE 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 = 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:**
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Vol_{att}: 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: 08/05/2023
Scale: 1:500 @ A1
1:1000 @ A3

Project Code: BCIDB
Originator Code: JAC

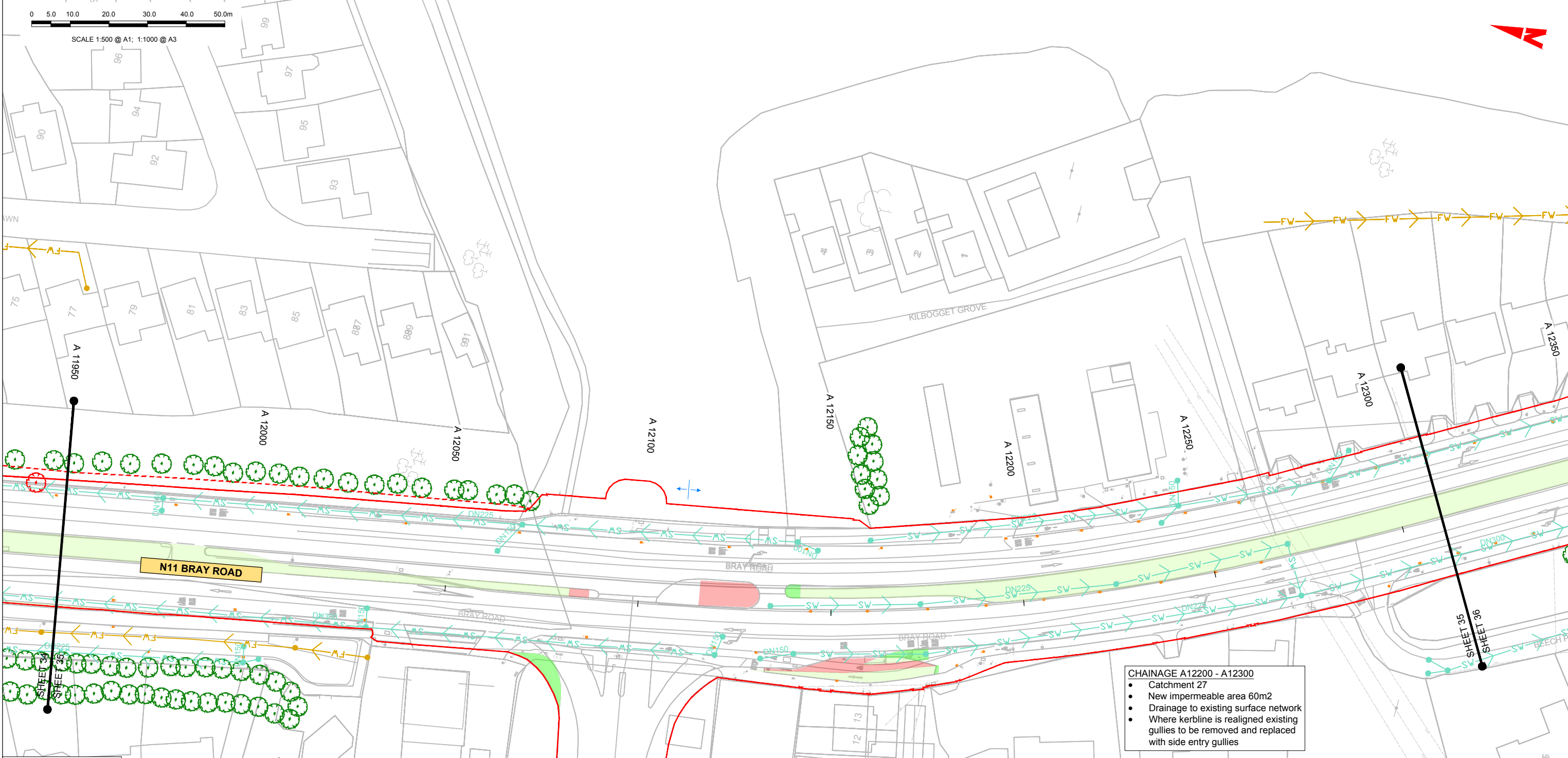
Drawn: BD
Checked: NS
Approved: RS

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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THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:	
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
	EXISTING PAVED AREAS TO BECOME GRASSED
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	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
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	PROPOSED MANHOLE
	PROPOSED INSPECTION CHAMBER
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	PROPOSED NEW TREE
	PROPOSED NEW TREE PIT
	PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	EXISTING GULLY
	SITE BOUNDARY LINE
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CHAINAGE A11850 - A12200

- Catchment 28
- New impermeable area 136m²
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

CHAINAGE A12200 - A12300

- Catchment 27
- New impermeable area 60m²
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

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ABBREVIATIONS:
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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

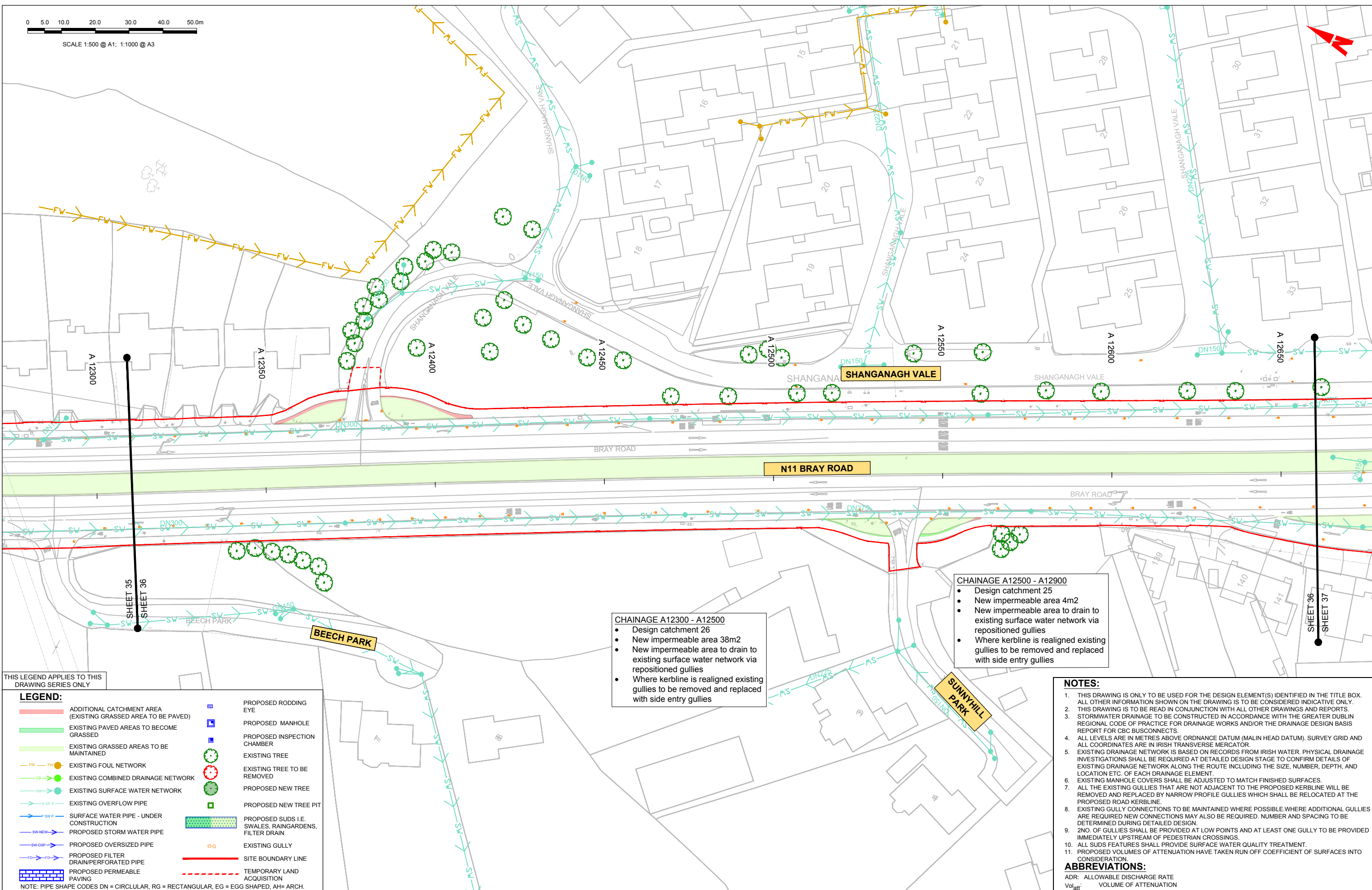
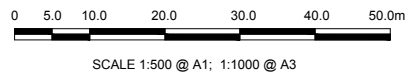
Client
NTA
Údarás Náisiúnta Iompair
National Transport Authority

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-0035	Sheet Number 35 of 54	Status A	Rev M01

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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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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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	PROPOSED PERMEABLE PAVING		

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

ABBREVIATIONS:

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

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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:

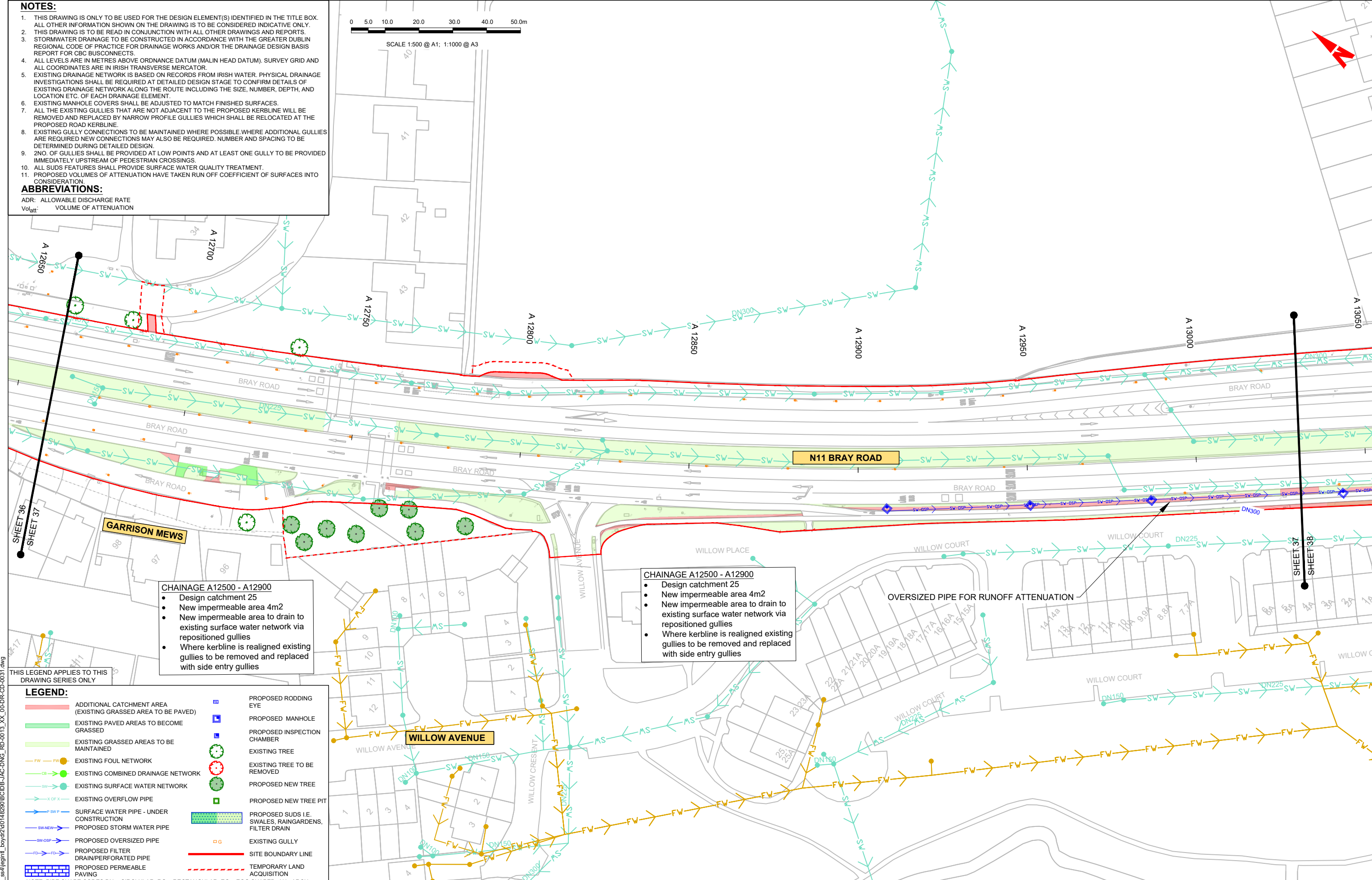
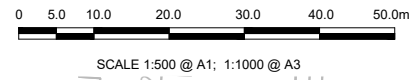
Programme Title: **BUSCONNECTS DUBLIN**
CORE BUS CORRIDORS INFRASTRUCTURE WORKS

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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ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: 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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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

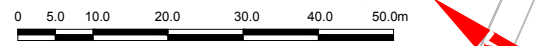
Project Code: BCIDB | Originator Code: JAC | OMS Code:

Programme Title 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-0037	Sheet Number 37 of 54	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

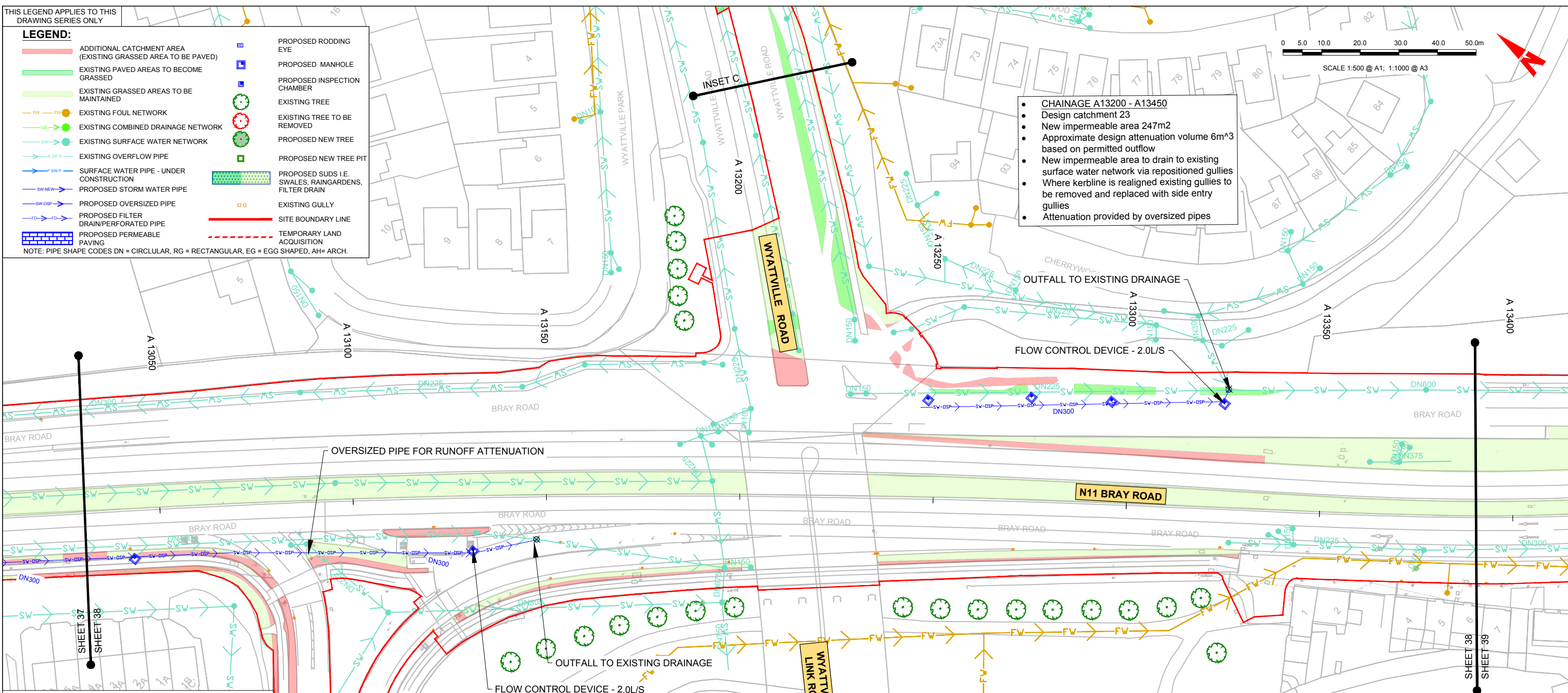
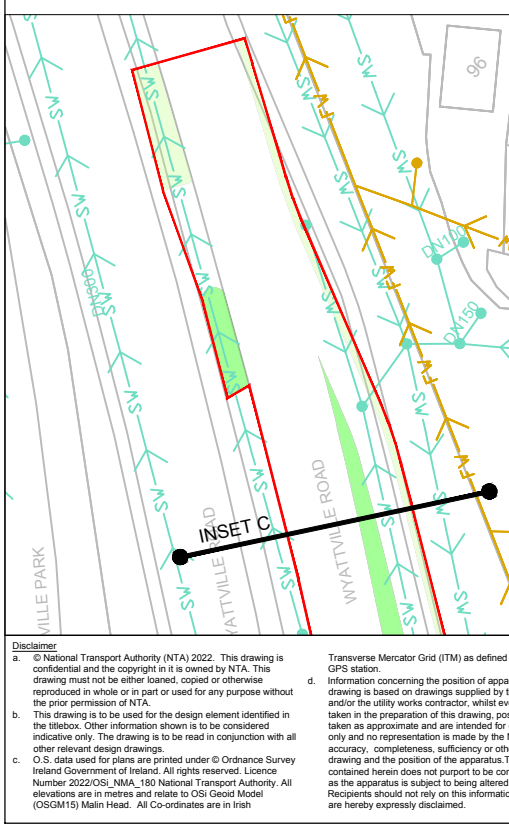
- LEGEND:**
- ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)
 - EXISTING PAVED AREAS TO BECOME GRASSED
 - EXISTING GRASSED AREAS TO BE MAINTAINED
 - EXISTING FOUL NETWORK
 - EXISTING COMBINED DRAINAGE NETWORK
 - EXISTING SURFACE WATER NETWORK
 - EXISTING OVERFLOW PIPE
 - SURFACE WATER 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 247m²
 - Approximate design attenuation volume 6m³ 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

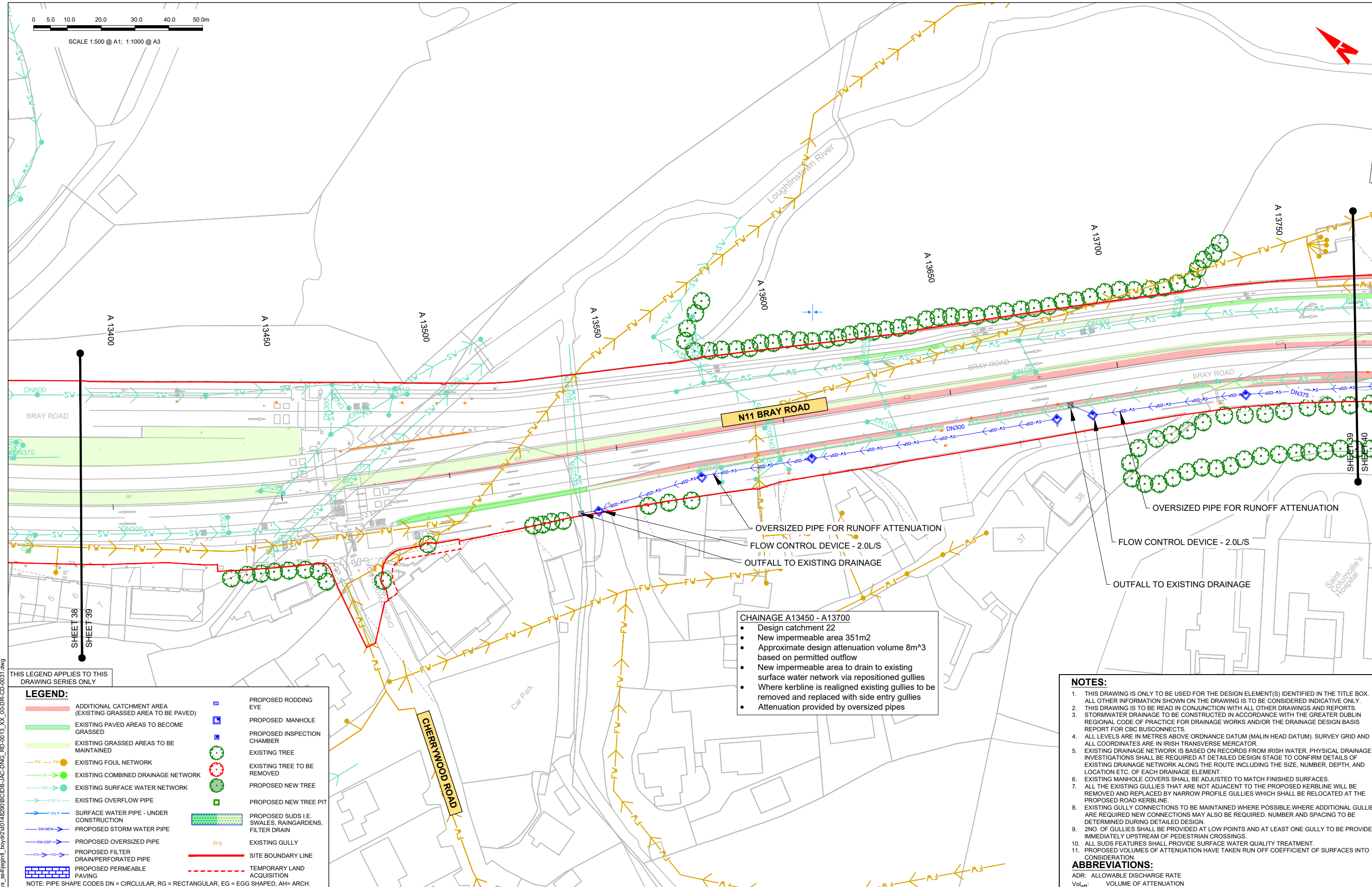
- CHAINAGE A12900 - A13200**
- Design catchment 24
 - New impermeable area 534m²
 - Approximate design attenuation volume 8m³ based on permitted outflow
 - New impermeable area to drain to existing surface water network via repositioned gullies
 - Where kerblines are realigned existing gullies to be 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_{att}: VOLUME OF ATTENUATION



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<p>Project Ireland 2040 Building Ireland's Future</p>		<p>Description ISSUE FOR PHASE 4: PLANNING</p>		<p>Date 08/05/2023</p>		<p>Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Client NTA Údarás Náisiúnta Iompair National Transport Authority</p>		<p>Engineering Designer Jacobs</p>		<p>Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>	
<p>Project Ireland 2040 Building Ireland's Future</p>		<p>Date 08/05/2023</p>		<p>Scale 1:500 @ A1 1:1000 @ A3</p>		<p>Client NTA Údarás Náisiúnta Iompair National Transport Authority</p>		<p>Engineering Designer Jacobs</p>		<p>Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0038</p>		<p>Sheet Number 38 of 54 Status A Rev M01</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
	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 351m²
- Approximate design attenuation volume 8m³ 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
Vol_{att}: VOLUME OF ATTENUATION

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-0039
Sheet Number: 39 of 54
Status: A
Rev: M01

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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**
Óðaras 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:

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ABBREVIATIONS:

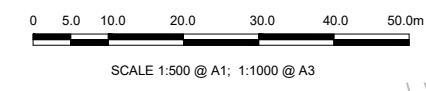
ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

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
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	PROPOSED PERMEABLE PAVING		

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



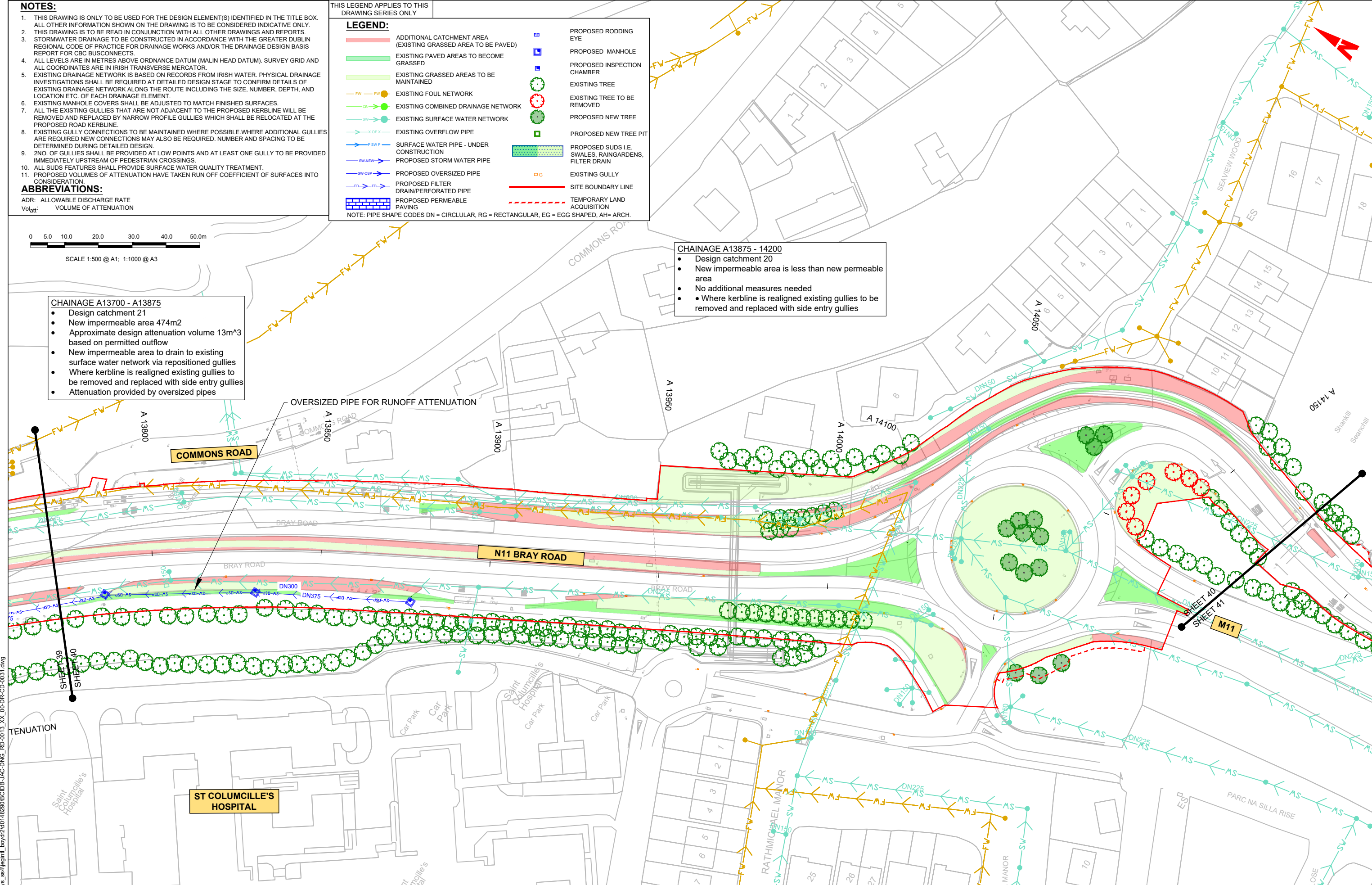
CHAINAGE A13700 - A13875

- Design catchment 21
- New impermeable area 474m²
- Approximate design attenuation volume 13m³ 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 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-0040	Sheet Number 40 of 54	Status A	Rev M01

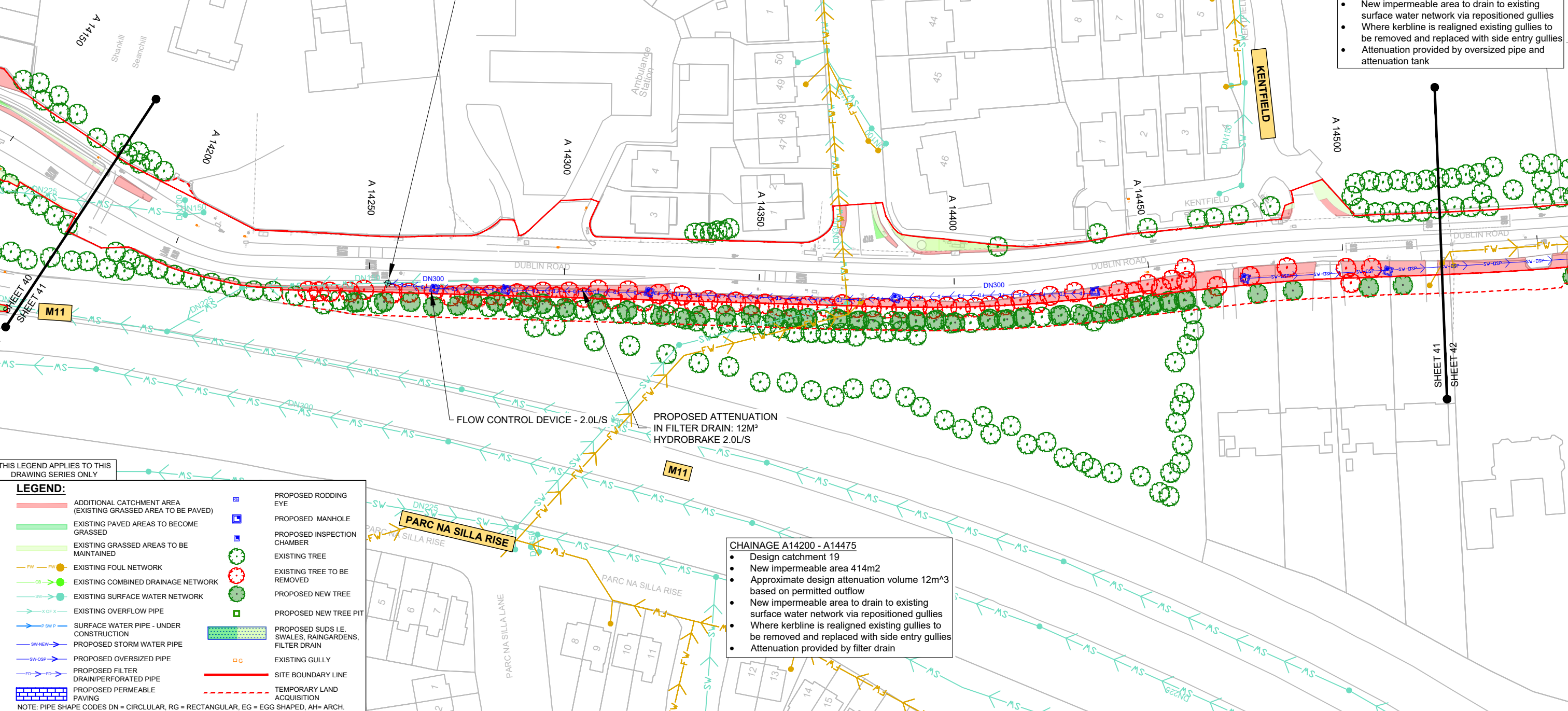
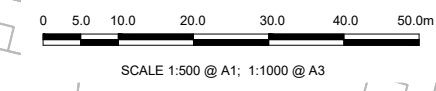
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5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION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



CHAINAGE A14475 - A14700

- Design catchment 18
- New impermeable area 718m²
- Approximate design attenuation volume 25m³ 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

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

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CHAINAGE A14200 - A14475

- Design catchment 19
- New impermeable area 414m²
- Approximate design attenuation volume 12m³ 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>													

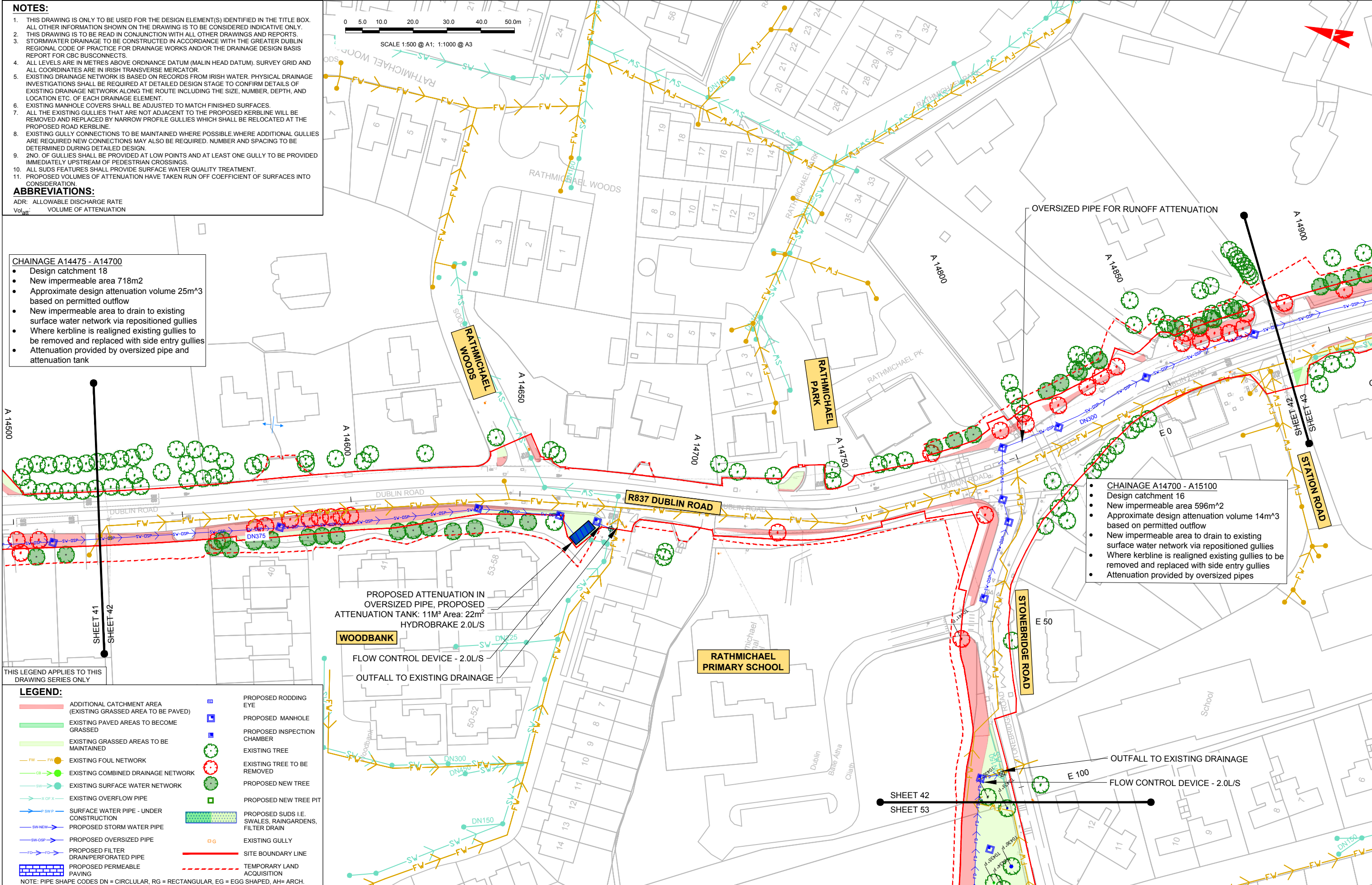
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ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: VOLUME OF ATTENUATION

- CHAINAGE A14475 - A14700**
- Design catchment 18
 - New impermeable area 718m²
 - Approximate design attenuation volume 25m³ 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 pipe and attenuation tank

- CHAINAGE A14700 - A15100**
- Design catchment 16
 - New impermeable area 596m²
 - Approximate design attenuation volume 14m³ 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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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			

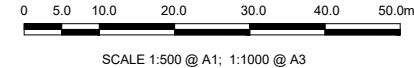
Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0042	Sheet Number 42 of 54	Status A	Rev M01

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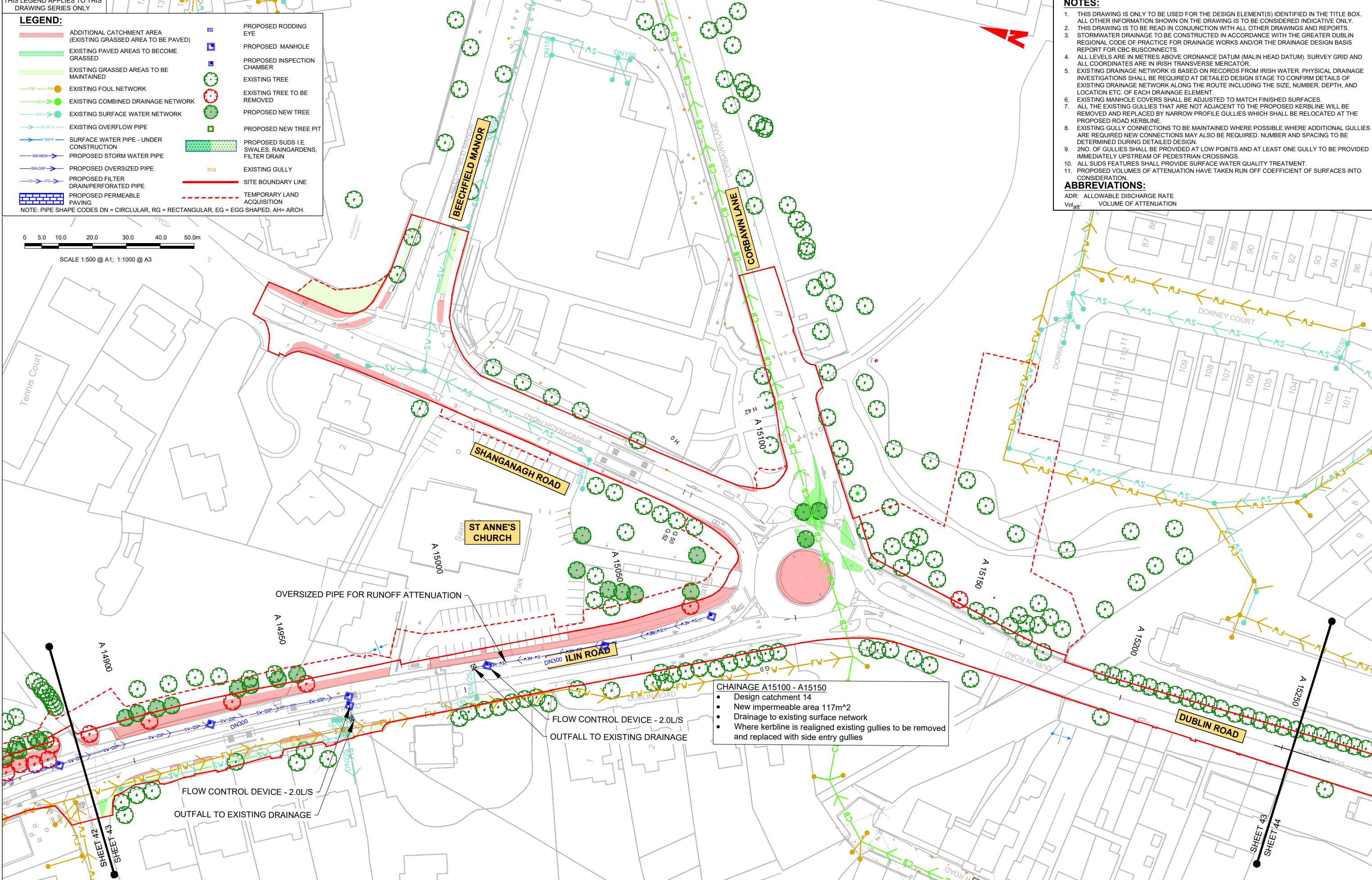
THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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



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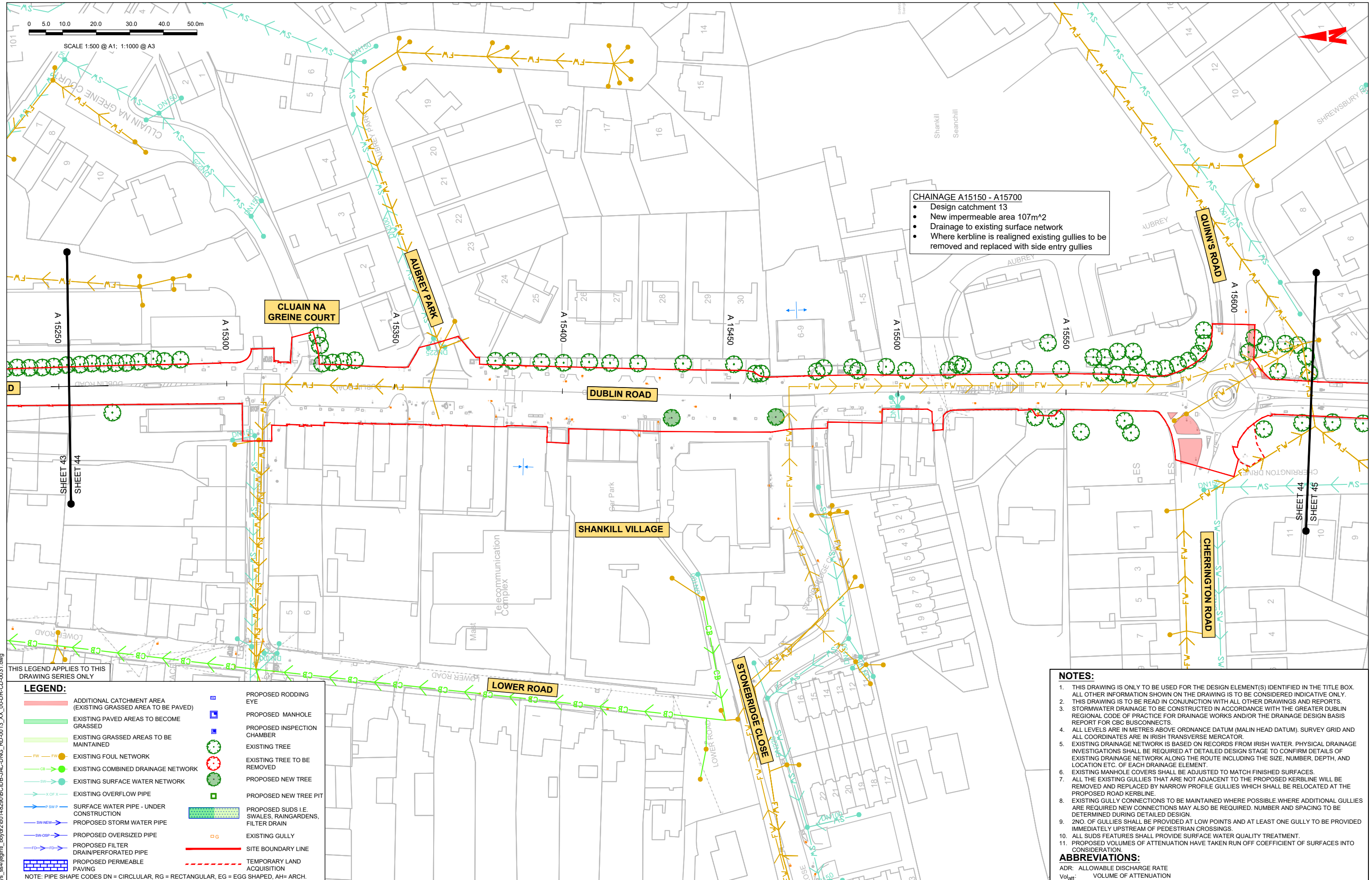
Engineering Designer: **Jacobs**

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			
Drawing Title: CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
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 107m²
- Drainage to existing surface network
- 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 PAVING
	PROPOSED PERMEABLE PAVING		

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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
Volatt: 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

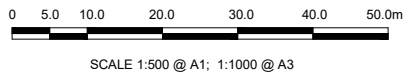
Client: **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer: **Jacobs**

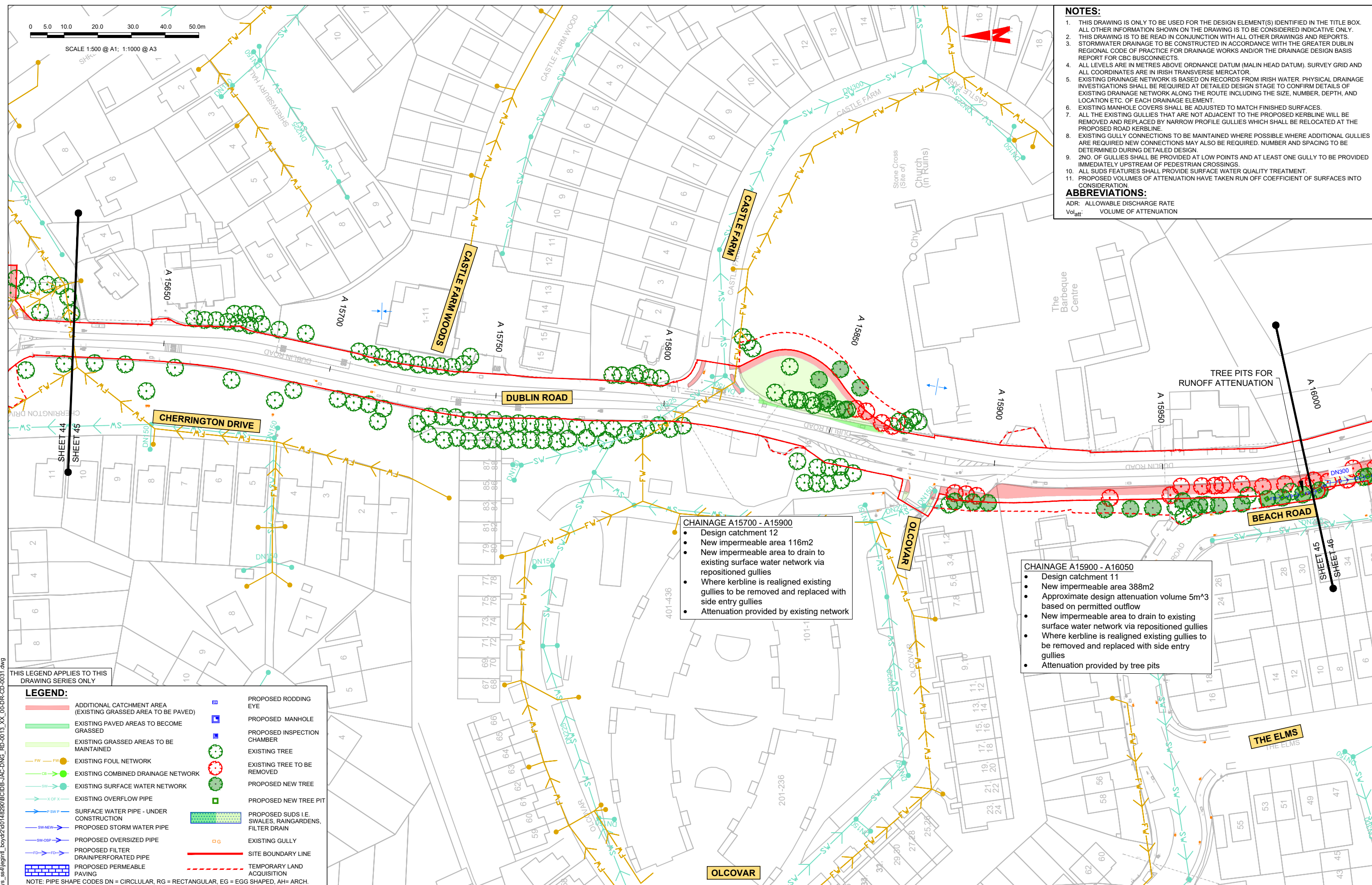
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title			
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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- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION



CHAINAGE A15700 - A15900

- Design catchment 12
- New impermeable area 116m²
- 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 388m²
- Approximate design attenuation volume 5m³ 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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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: BCIDB | Originator Code: JAC | OMS Code: [blank]

Programme Title: BUSCONNECTS DUBLIN			
Drawing Title: CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
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 2717m²
 - Approximate design attenuation volume 120m³ 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 388m²
 - Approximate design attenuation volume 5m³ 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

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	Dm	Chk'd	App'd	Description
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Client		Engineering Designer	
 Údarás Náisiúnta Iompair National Transport Authority		 Jacobs	
Date	Scale	Drawn	Checked
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS
Approved	RS	Project Code	
		BCIDB	
Originator Code		OMS Code	
JAC			

Programme Title		BUSCONNECTS DUBLIN	
Drawing Title		CORE BUS CORRIDORS INFRASTRUCTURE WORKS	
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_{att}: VOLUME OF ATTENUATION

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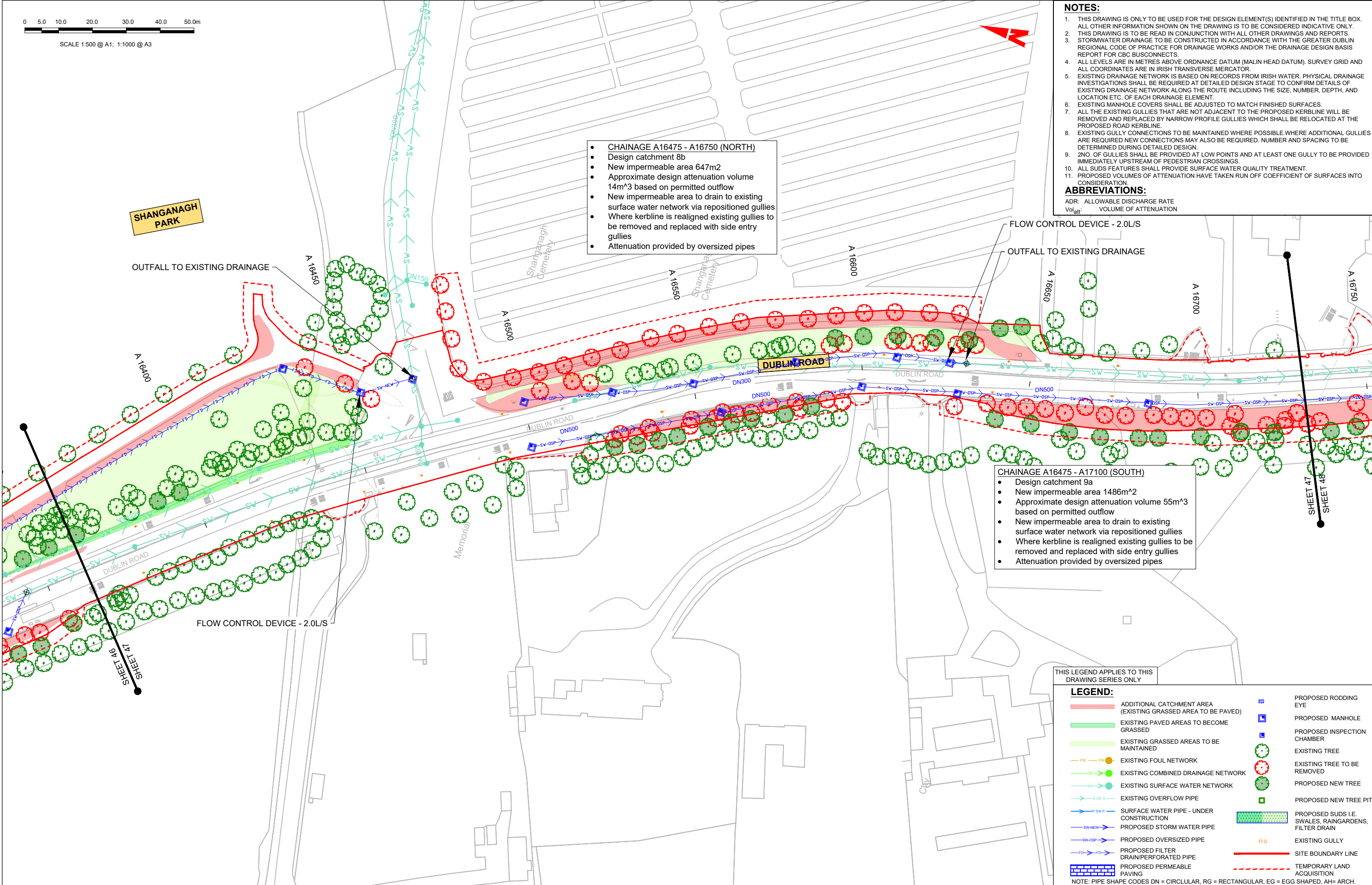


SCALE 1:500 @ A1; 1:1000 @ A3

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Vol_{att}: VOLUME OF ATTENUATION

- CHAINAGE A16475 - A16750 (NORTH)**
- Design catchment 8b
 - New impermeable area 647m²
 - Approximate design attenuation volume 14m³ 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 1486m²
 - Approximate design attenuation volume 55m³ 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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	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
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	PROPOSED PERMEABLE PAVING		

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

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

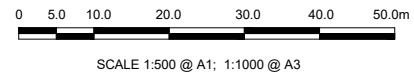
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0047 | Sheet Number: 47 of 54 | Status: A | Rev: M01

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



CHAINAGE A16750- A17100 (NORTH)

- Design catchment 8a
- New impermeable area 2332m²
- Approximate design attenuation volume 110m³ 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: 105M³ HYDROBRAKE 2.0L/S

PROPOSED ATTENUATION IN OVERSIZED PIPES: 110M³ HYDROBRAKE 2.0L/S

CHAINAGE A16475 - A17100 (SOUTH)

- Design catchment 9a
- New impermeable area 1486m²
- Approximate design attenuation volume 55m³ 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 183m²
- Approximate design attenuation volume 5m³ 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
	PROPOSED PERMEABLE PAVING		

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

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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-0048	Sheet Number: 48 of 54	Status: A	Rev: M01

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 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
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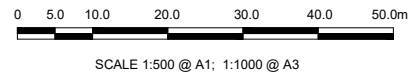
ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: VOLUME OF ATTENUATION

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

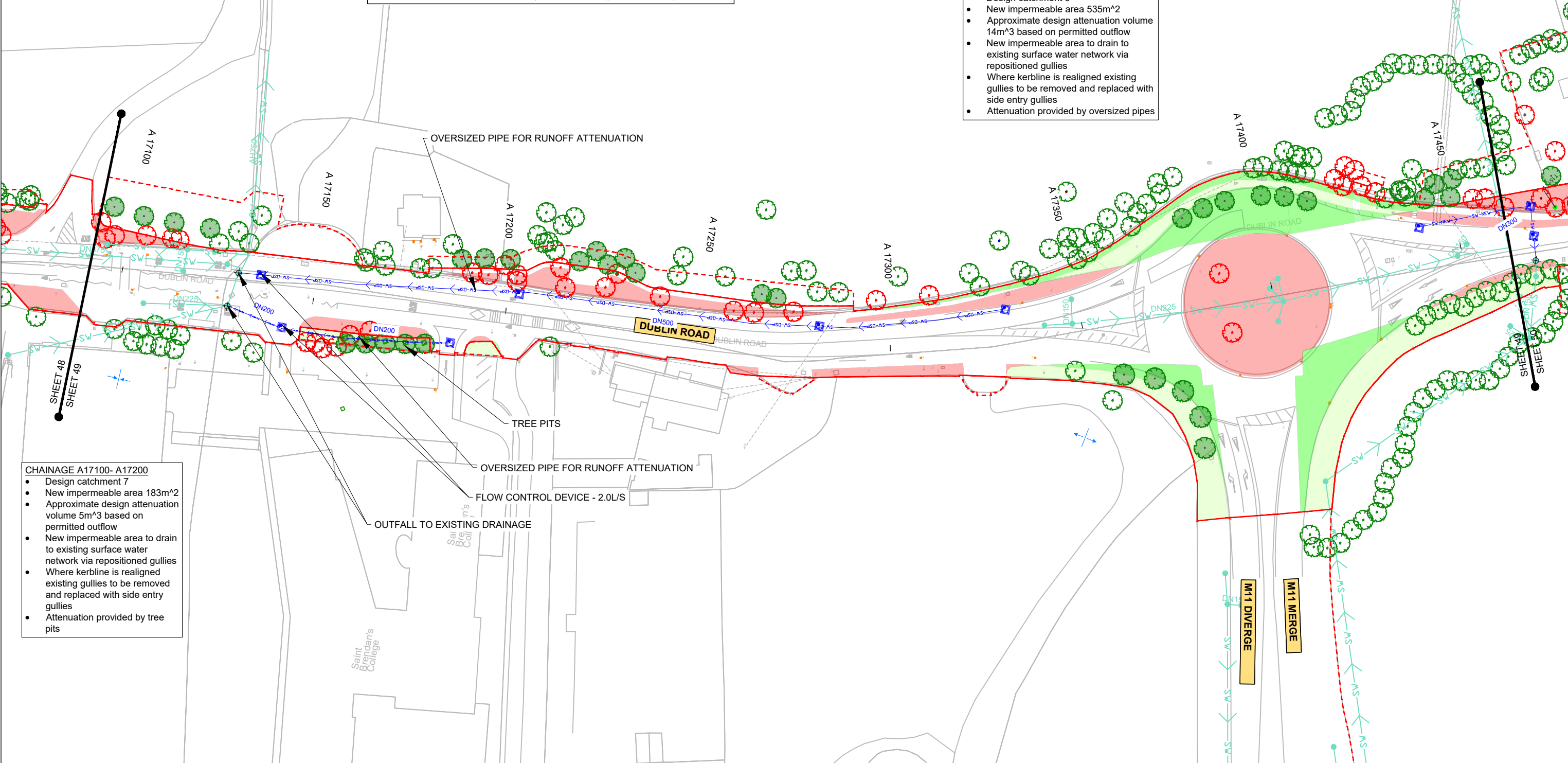
LEGEND:

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

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- CHAINAGE A17200 - A17500**
- Design catchment 6
 - New impermeable area 535m²
 - Approximate design attenuation volume 14m³ 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 183m²
 - Approximate design attenuation volume 5m³ 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

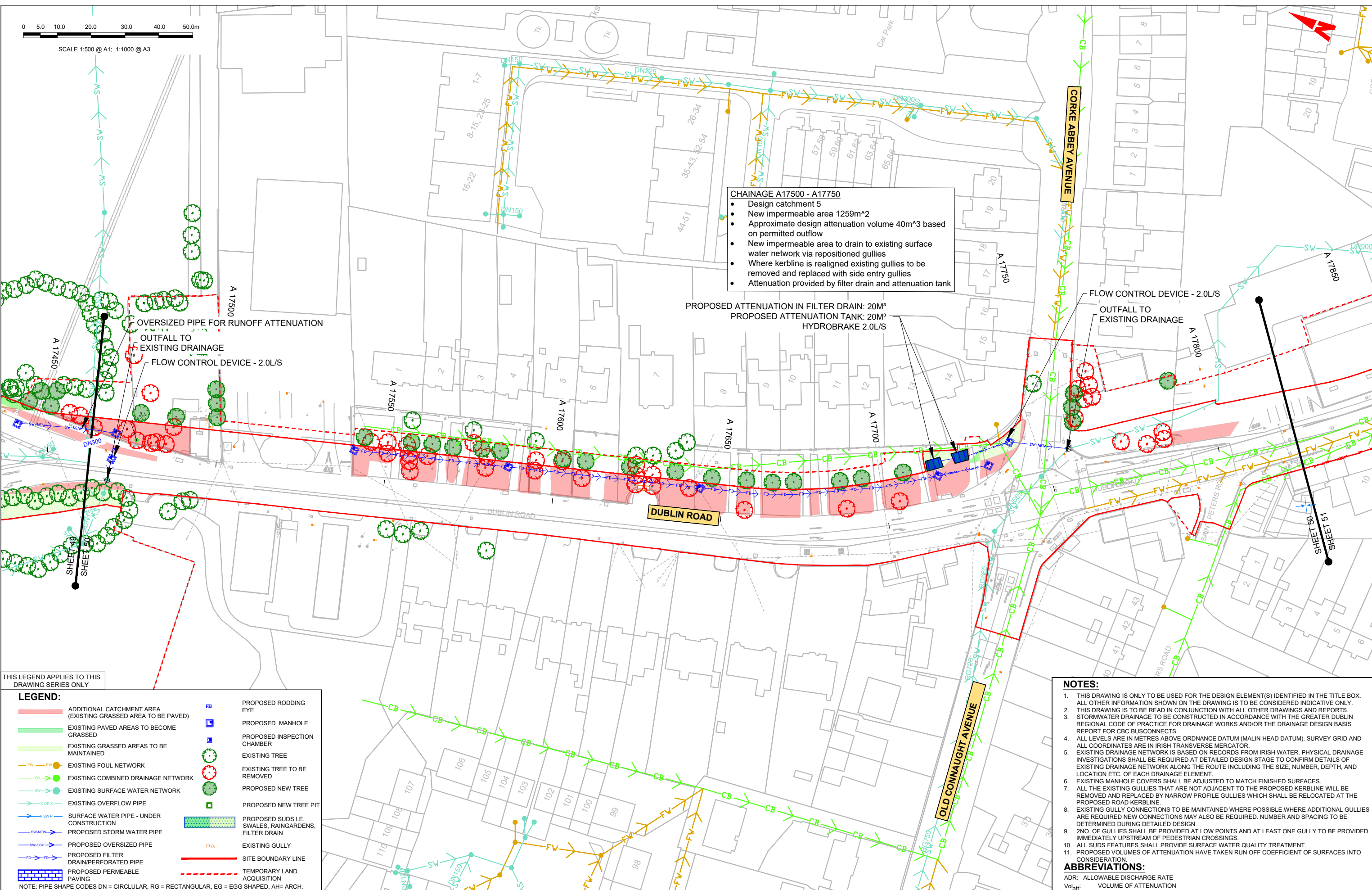
<p>Rev</p> <table border="1"> <tr> <th>Rev</th> <th>Date</th> <th>Drn</th> <th>Chk'd</th> <th>App'd</th> <th>Description</th> </tr> <tr> <td>M01</td> <td>08/05/2023</td> <td>BD</td> <td>NS</td> <td>RS</td> <td>ISSUE FOR PHASE 4: PLANNING</td> </tr> </table>	Rev	Date	Drn	Chk'd	App'd	Description	M01	08/05/2023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

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



CHAINAGE A17500 - A17750

- Design catchment 5
- New impermeable area 1259m²
- Approximate design attenuation volume 40m³ 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: 20M³
 PROPOSED ATTENUATION TANK: 20M³
 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
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	EXISTING FOUL NETWORK		EXISTING TREE
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	PROPOSED STORM WATER PIPE		EXISTING GULLY
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	PROPOSED FILTER DRAIN/PERFORATED PIPE		TEMPORARY LAND ACQUISITION PAVING
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ABBREVIATIONS:

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 Vol_{att}: 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**

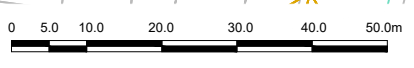
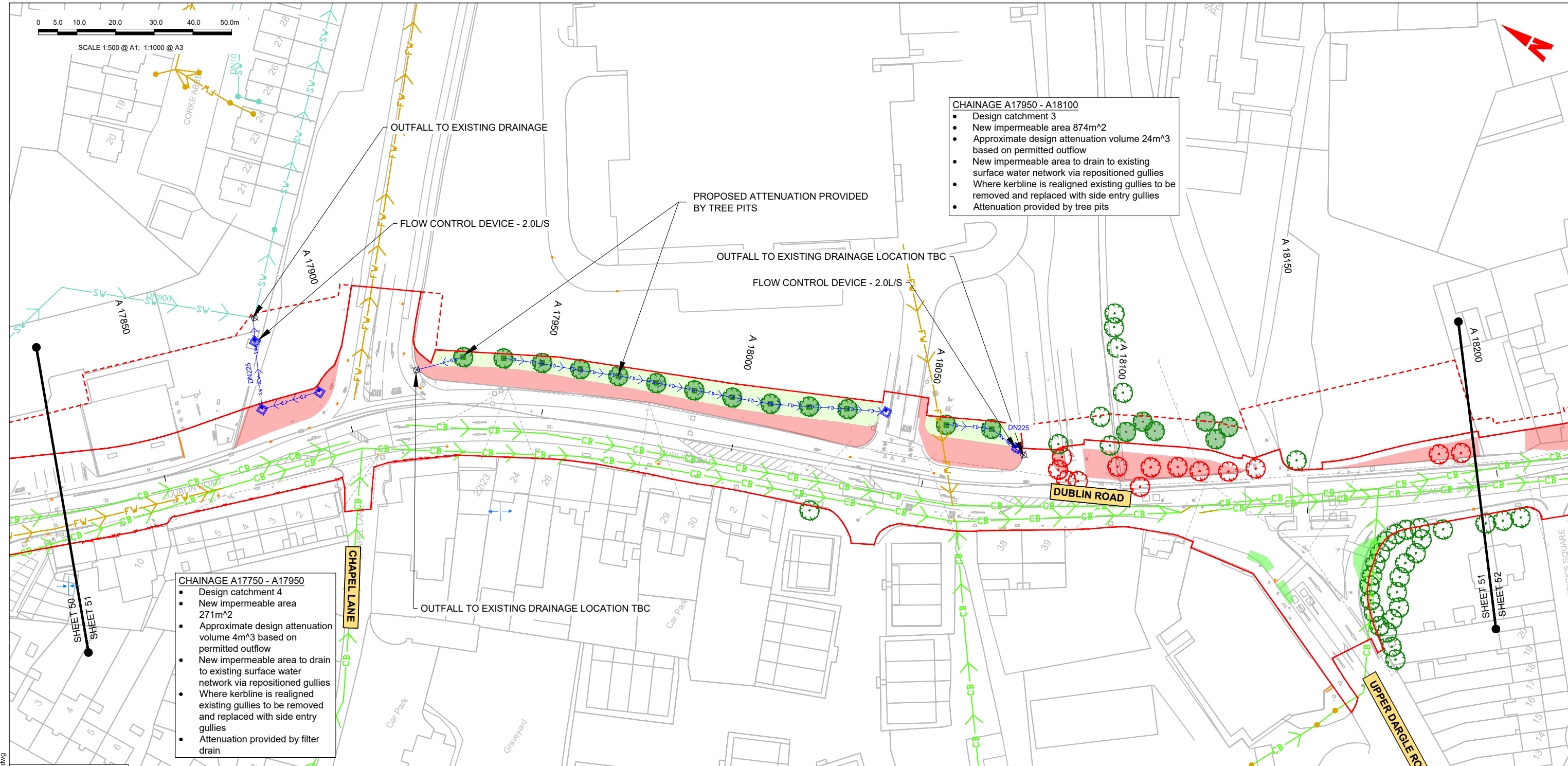
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

Programme Title: **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-0050	50 of 54	A	M01

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- CHAINAGE A17950 - A18100**
- Design catchment 3
 - New impermeable area 874m²
 - Approximate design attenuation volume 24m³ 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 271m²
 - Approximate design attenuation volume 4m³ 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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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
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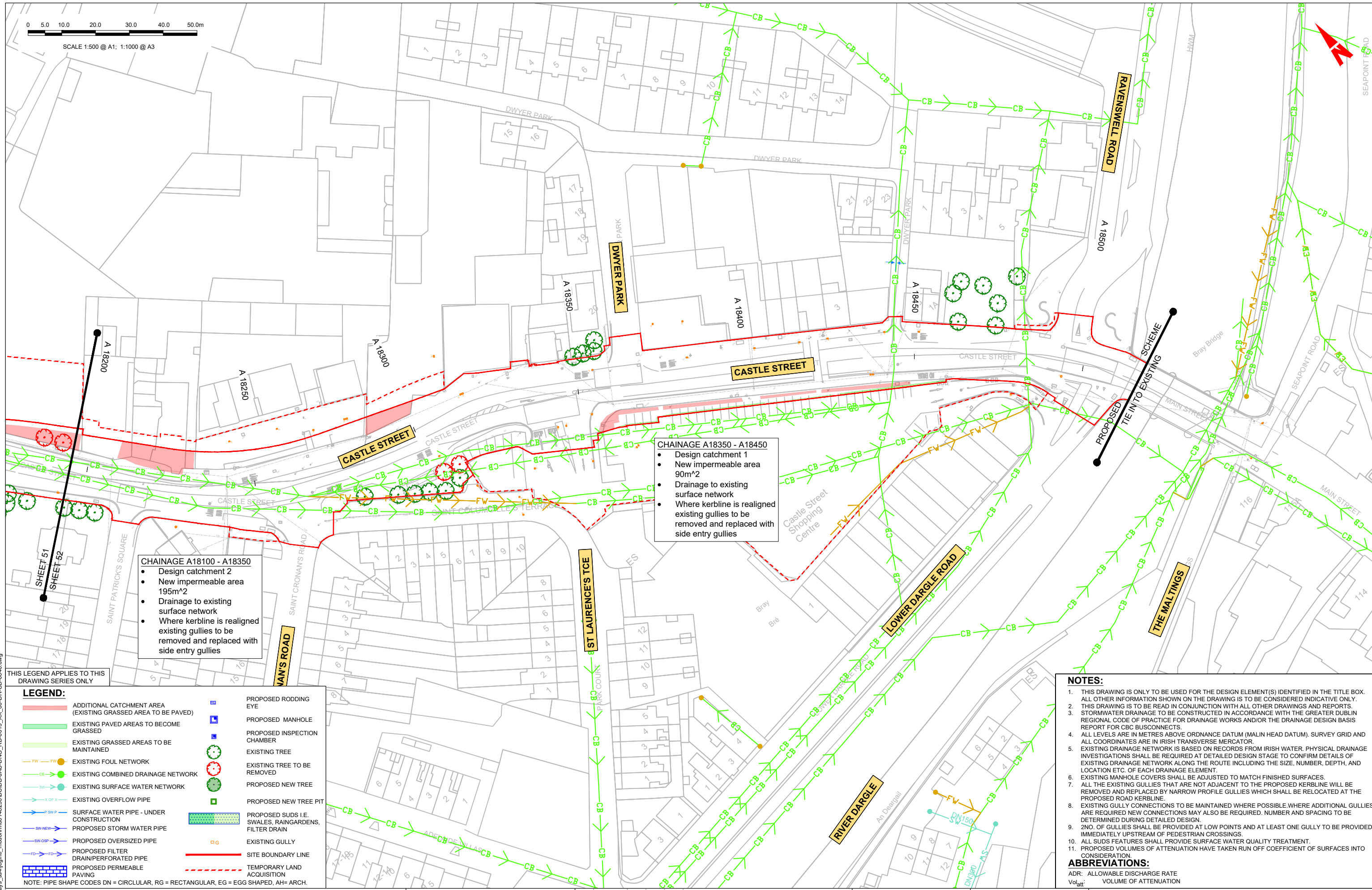
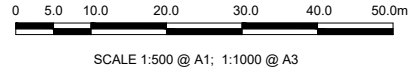
Engineering Designer: **Jacobs**

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:

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-0051	Sheet Number 51 of 54	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



CHAINAGE A18100 - A18350

- Design catchment 2
- New impermeable area 195m²
- 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 90m²
- 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_{att}: 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: 08/05/2023 | Scale: 1:500 @ A1, 1:1000 @ A3 | Drawn: BD | Checked: NS | Approved: RS

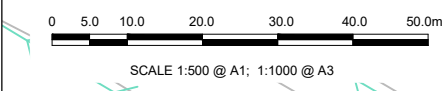
Project Code: BCIDB | Originator Code: JAC | QMS Code:

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-0052	Sheet Number: 52 of 54	Status: A	Rev: M01

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ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: 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		

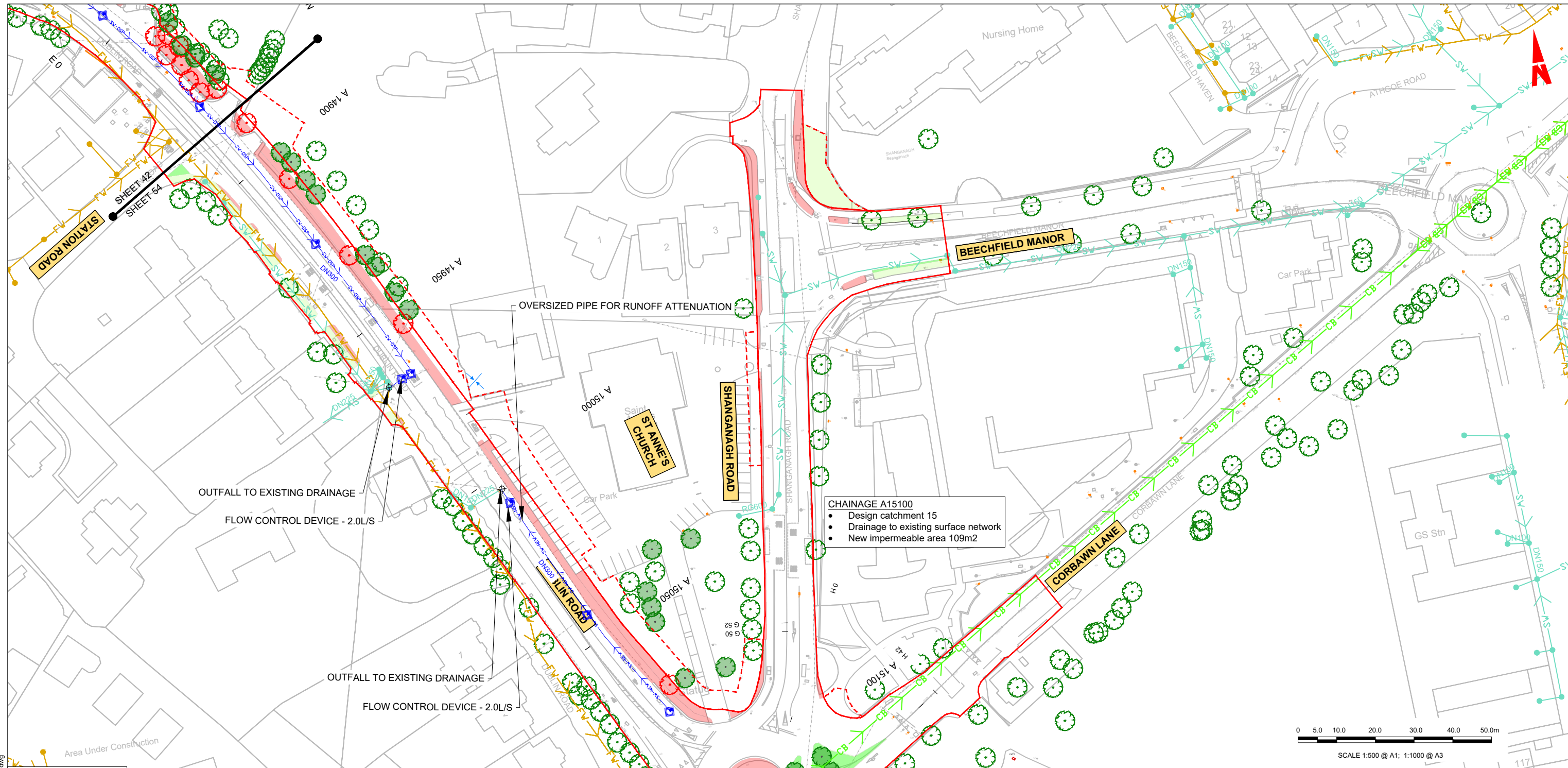
NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

CHAINAGE E50 - E200

- Design catchment 17
- New impermeable area 673m²
- Approximate design attenuation volume 23m³ 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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								<p>Rev</p> <p>M01</p>														

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CHAINAGE A15100

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

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