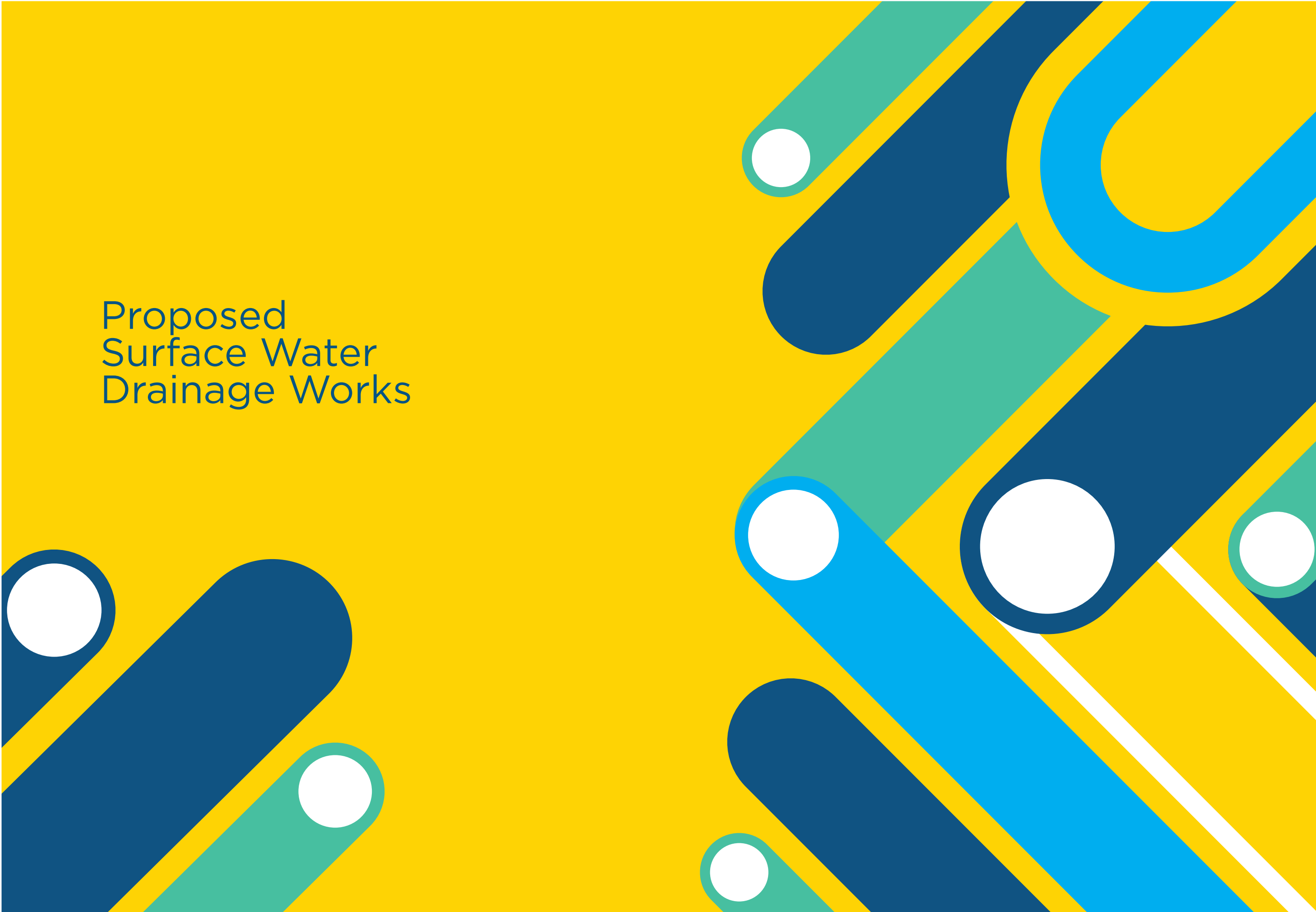


Proposed
Surface Water
Drainage Works





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

C:\pwworking\jacobs_uk_highways_ssc\legintl_bayd2d\0148280\BCIDB-JAC-DNG_IX-0013_XX_00-DR-CD-0001.dwg

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

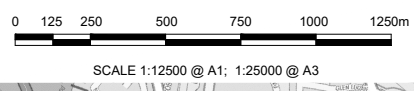
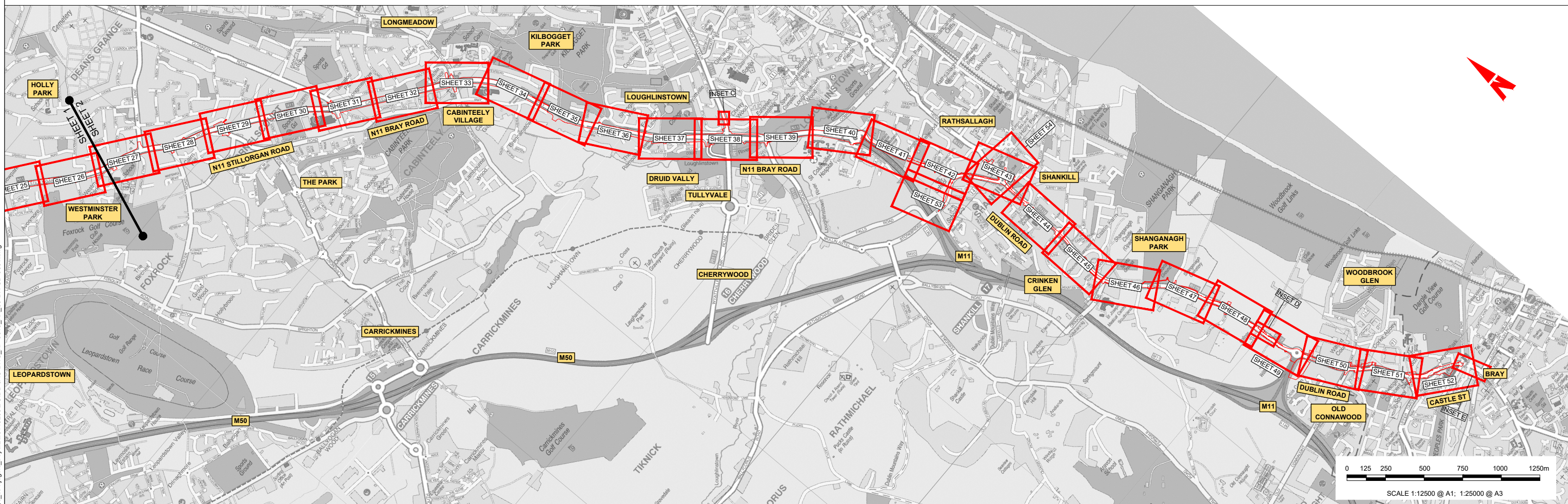
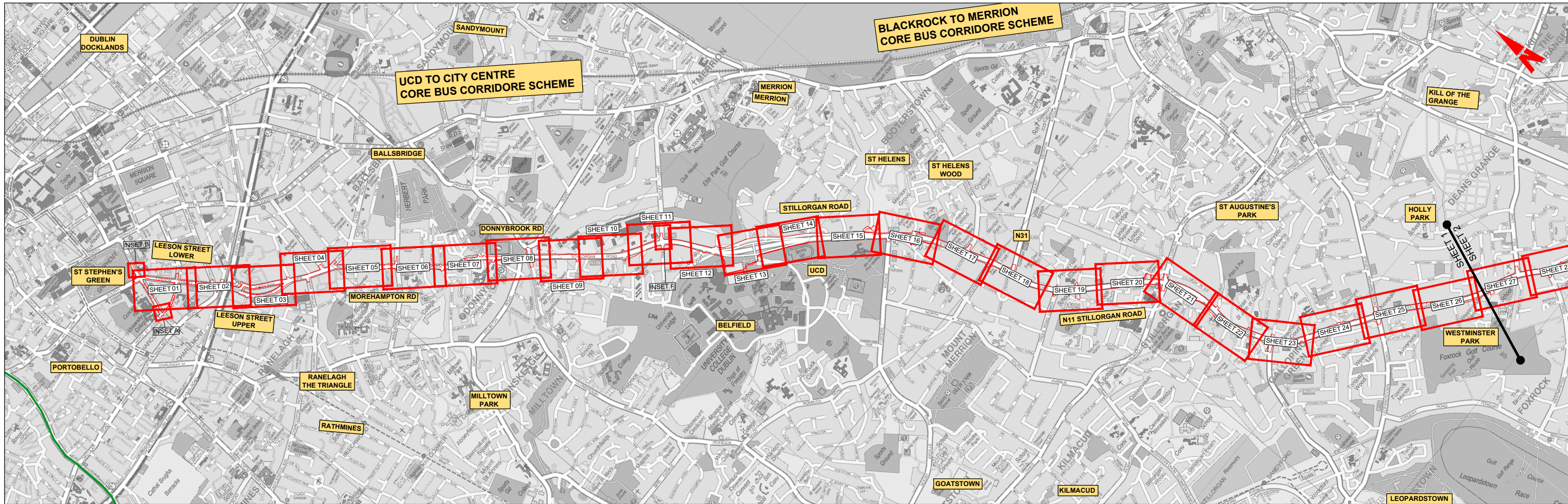


Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 160 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

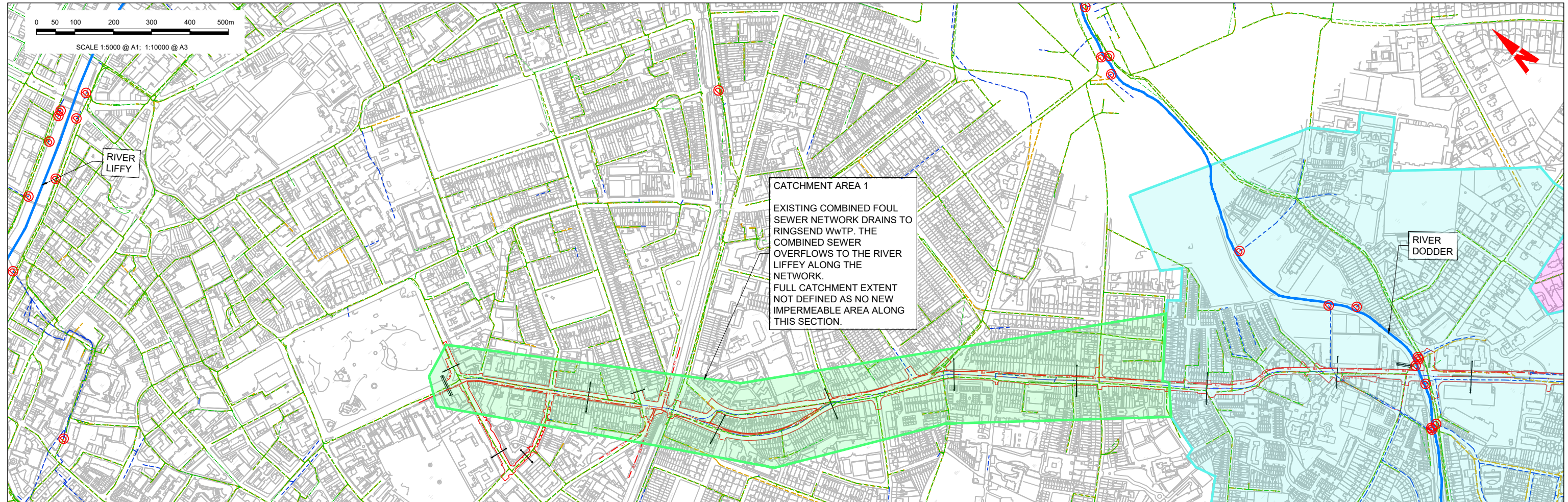
Project Ireland 2040
 Building Ireland's Future

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

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_asd\legintl_bayr2d\0142820\BCIDB-JAC-DNG_KP-0013_XX_00-DR-CD-0001.dwg



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 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

C:\pwworking\jacobs_uk_highways_asd\legintl_bovard\2d\142820\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001.dwg

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on information supplied by the utility owners and/or the utility works contractor, whilst every care has been taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
 e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

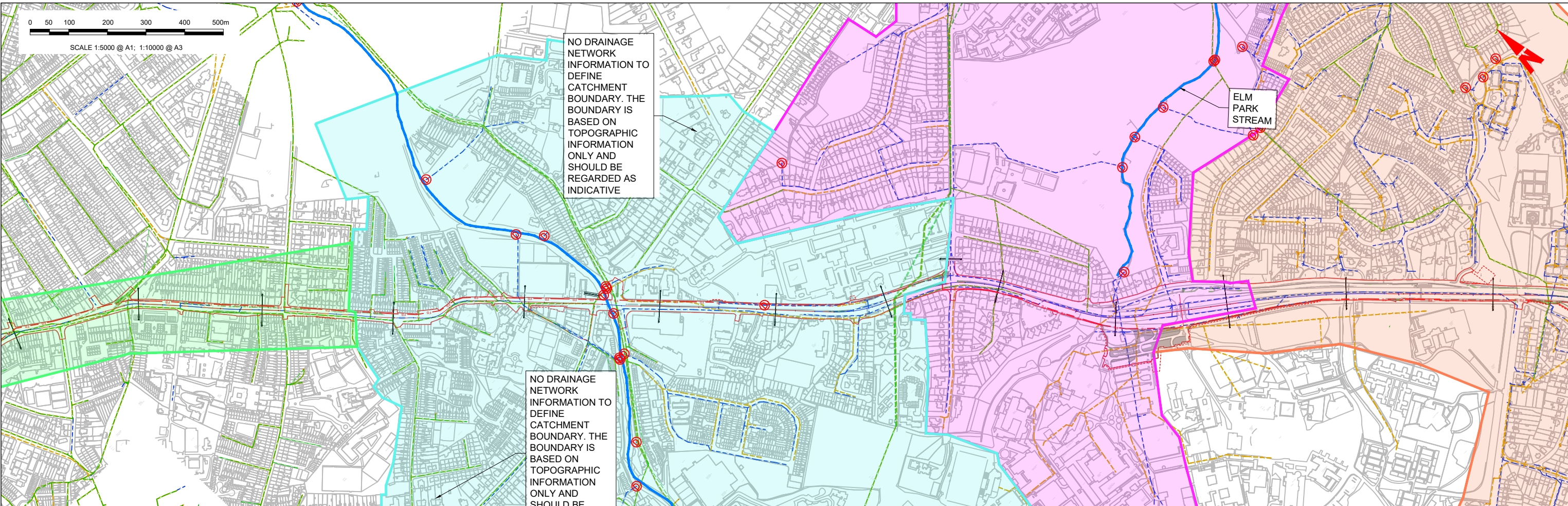
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ 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-1001		01 of 11	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

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 2
295.90 HECTARES
EXISTING STORMWATER NETWORK OUTFALLS TO THE RIVER DODDER

ELM PARK STREAM

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

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_150 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
 e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

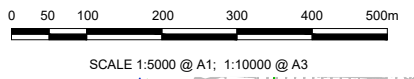
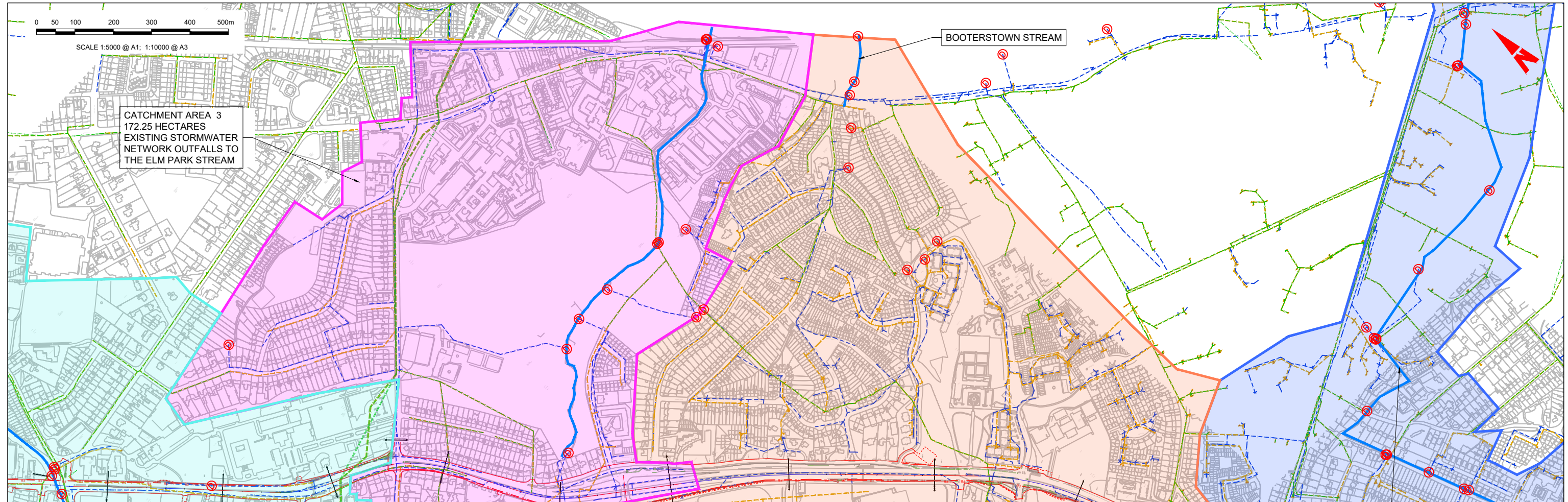


Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

 Údarás Náisiúnta Iompair National Transport Authority		Engineering Designer 		
Date	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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

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

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSI Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

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

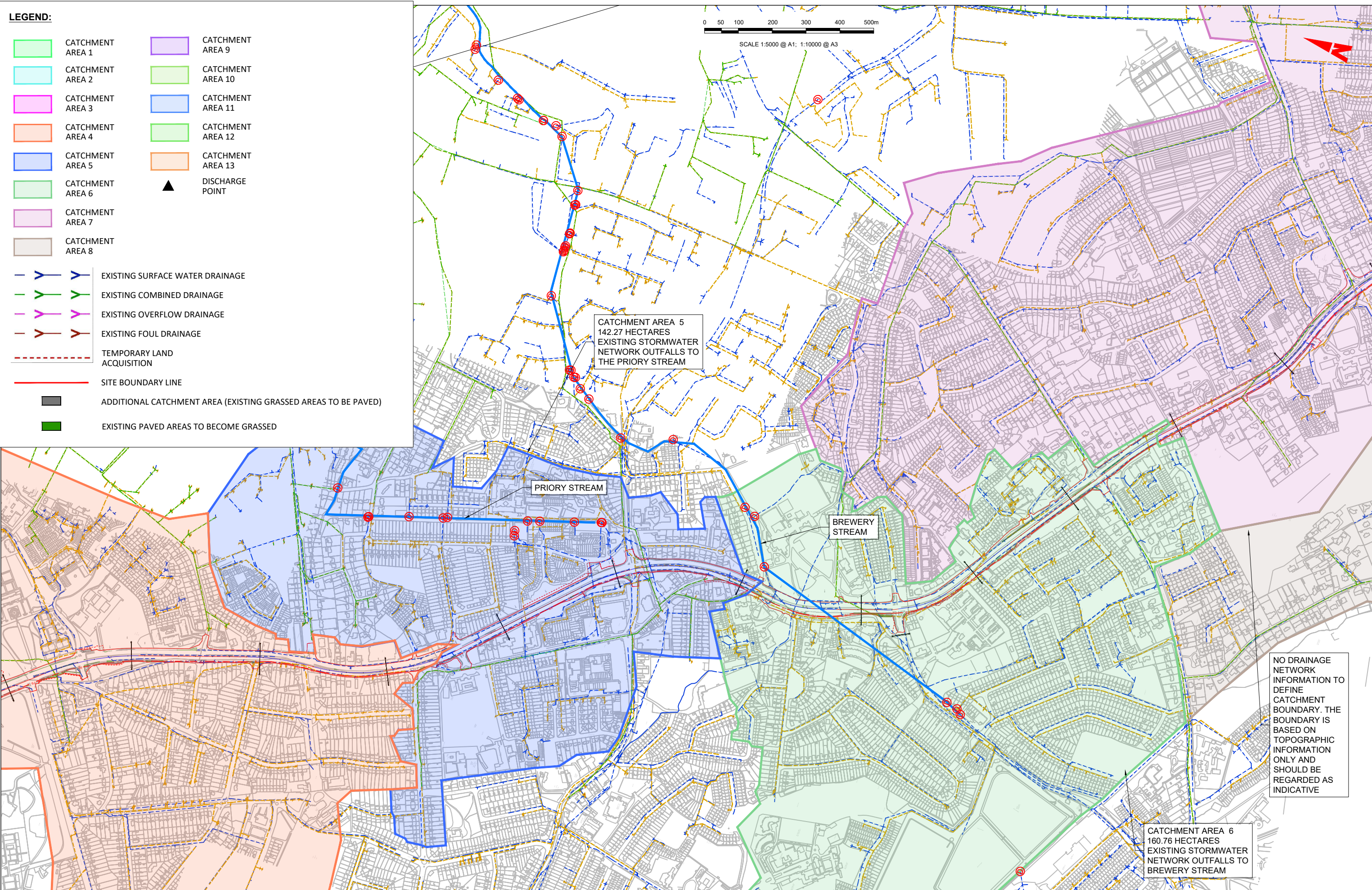
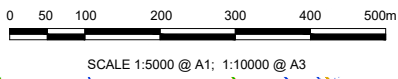
Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title BRAY TO CITY CENTRE SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1003	Sheet Number 03 of 11	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_asd\legintl_bovard\20148280\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001.dwg

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



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

Disclaimer
a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

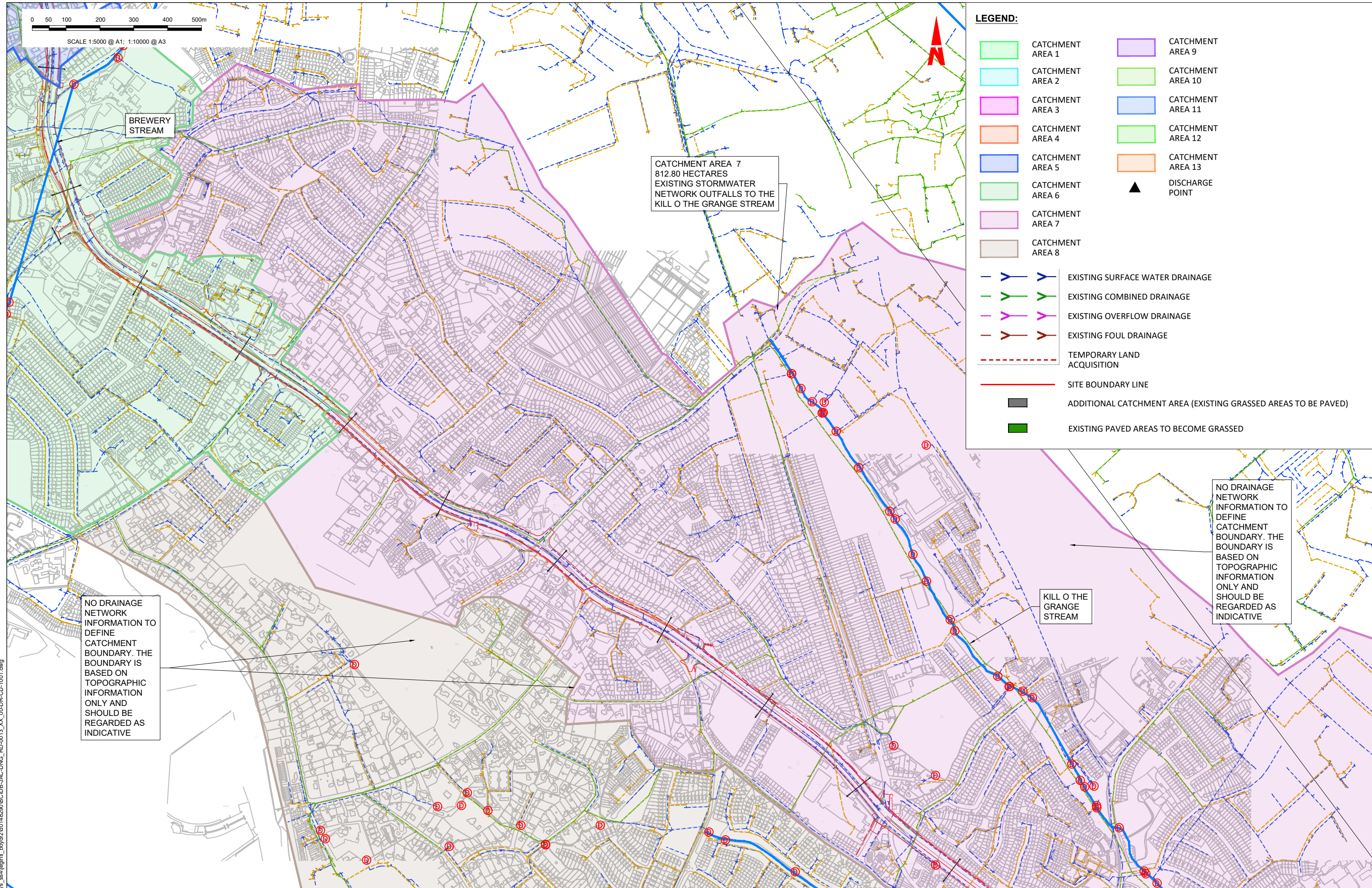
Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ 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 SCHEME DRAINAGE CATCHMENT AREAS			
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1004	Sheet Number 04 of 11	Status A	Rev M01

C:\pwworking\jacobs_uk_highways_asd\legintl_bayard\2d\0148280\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1001.dwg



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

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

KILL O THE GRANGE STREAM

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

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
 e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

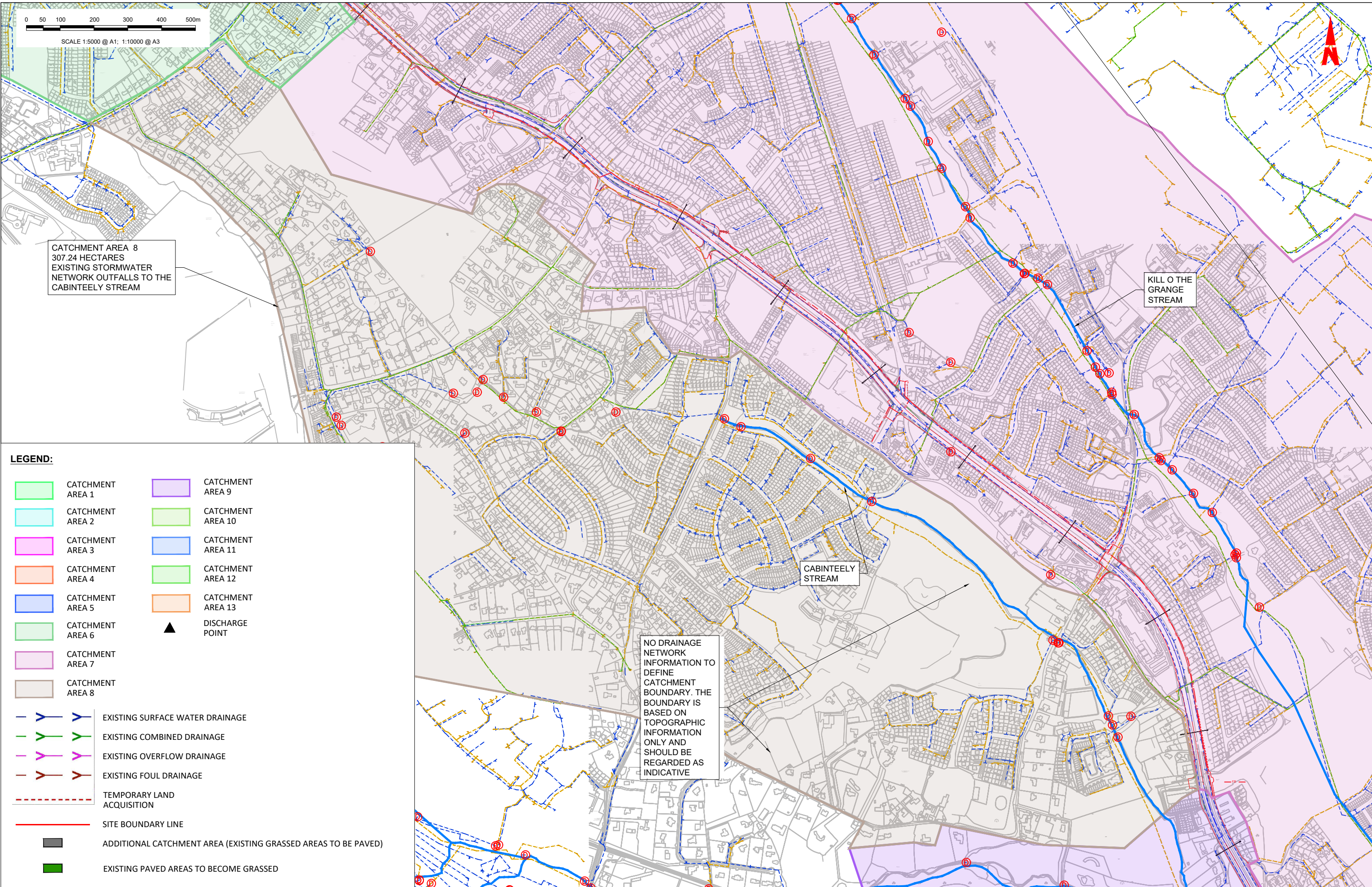
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ A1 1:10000 @ 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 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
- 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

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
 e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

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

Engineering Designer: **Jacobs**

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

Project Code: BCIDB
 Originator Code: JAC

Drawn: BD
 Checked: NS
 Approved: RS

Programme Title: 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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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



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

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

Project Ireland 2040
Building Ireland's Future

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

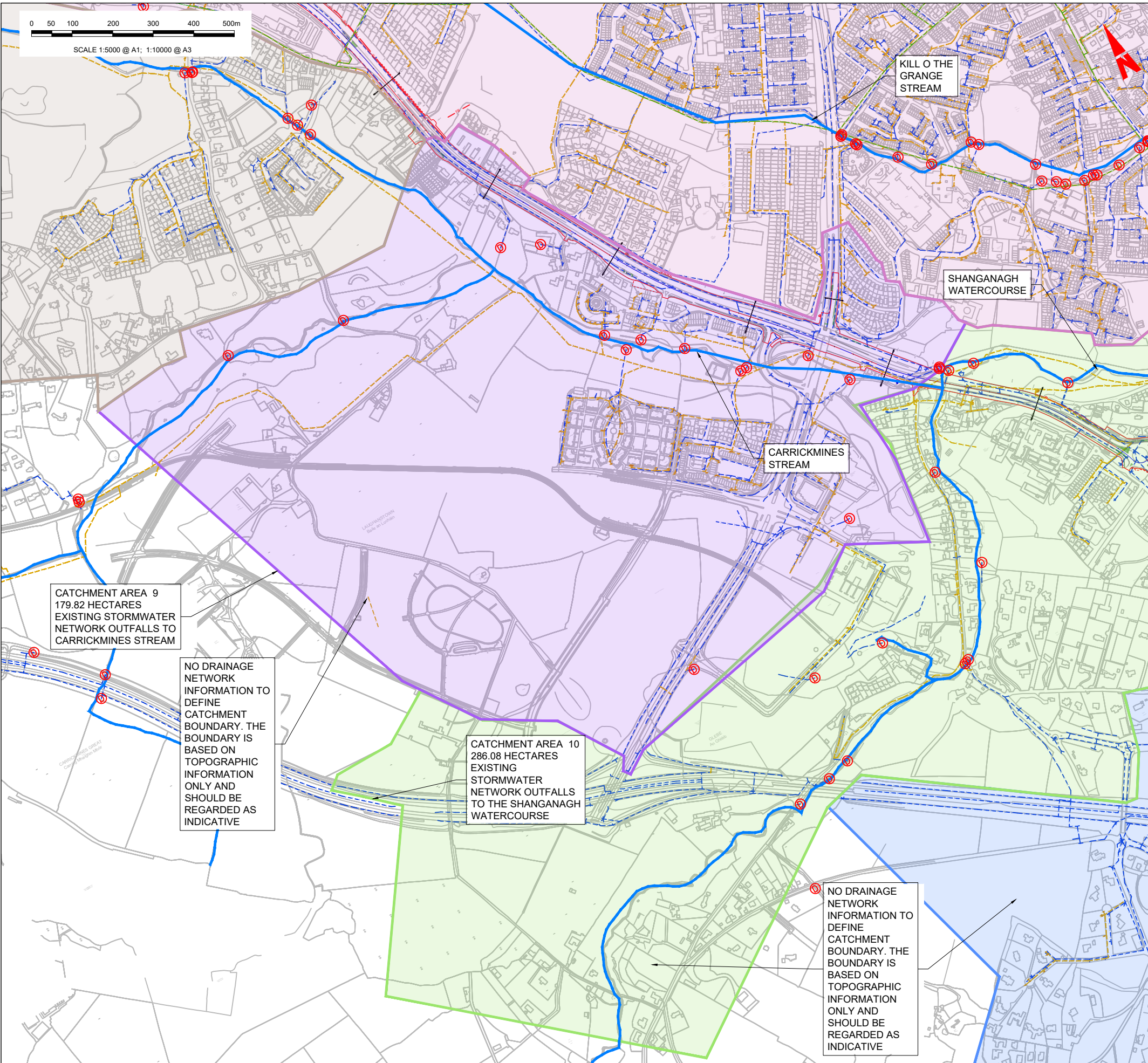
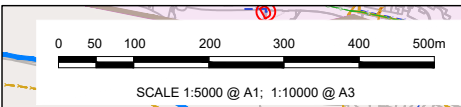
Client: **NTA** Údarás Náisiúnta Iompair National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:5000 @ 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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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 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
REGARDED AS
INDICATIVE

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

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

Engineering Designer: **Jacobs**

Date	08/05/2023	Scale	1:5000 @ A1 1:10000 @ A3	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 SCHEME DRAINAGE CATCHMENT AREAS		
Drawing File Name	BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1008	Sheet Number	08 of 11
Status	A	Rev	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.


Project Ireland 2040
Building Ireland's Future

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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



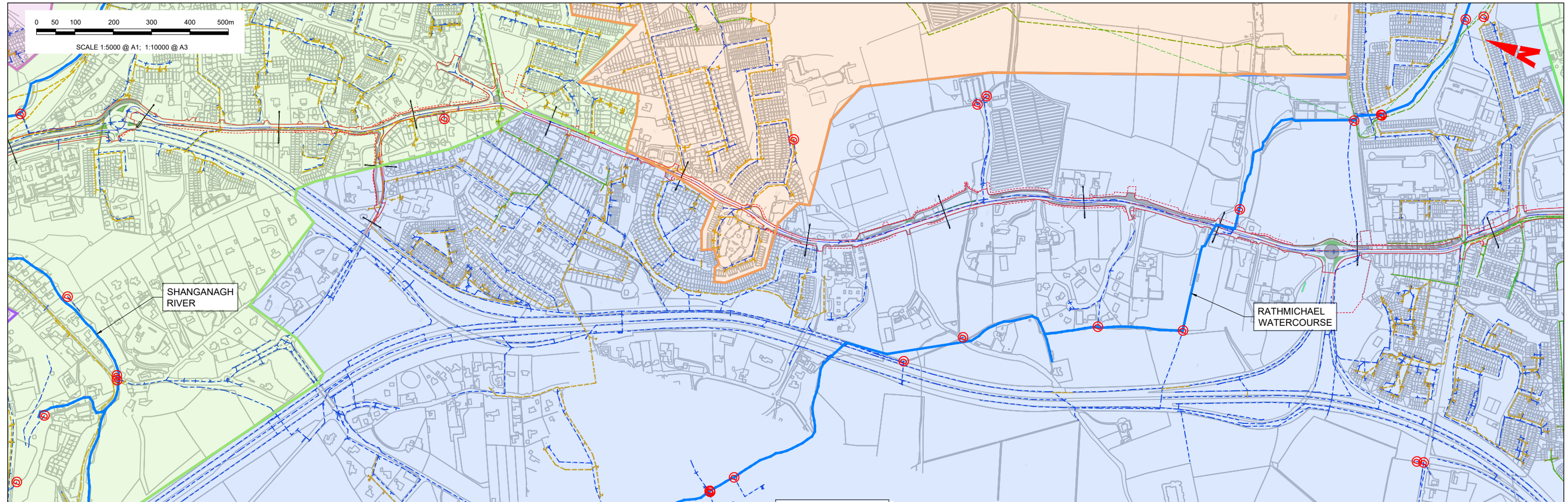
Údarás Náisiúnta Iompair
National Transport Authority



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

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



LEGEND:

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

	EXISTING SURFACE WATER DRAINAGE
	EXISTING COMBINED DRAINAGE
	EXISTING OVERFLOW DRAINAGE
	EXISTING FOUL DRAINAGE
	TEMPORARY LAND ACQUISITION
	SITE BOUNDARY LINE
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREAS TO BE PAVED)
	EXISTING PAVED AREAS TO BECOME GRASSED

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

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



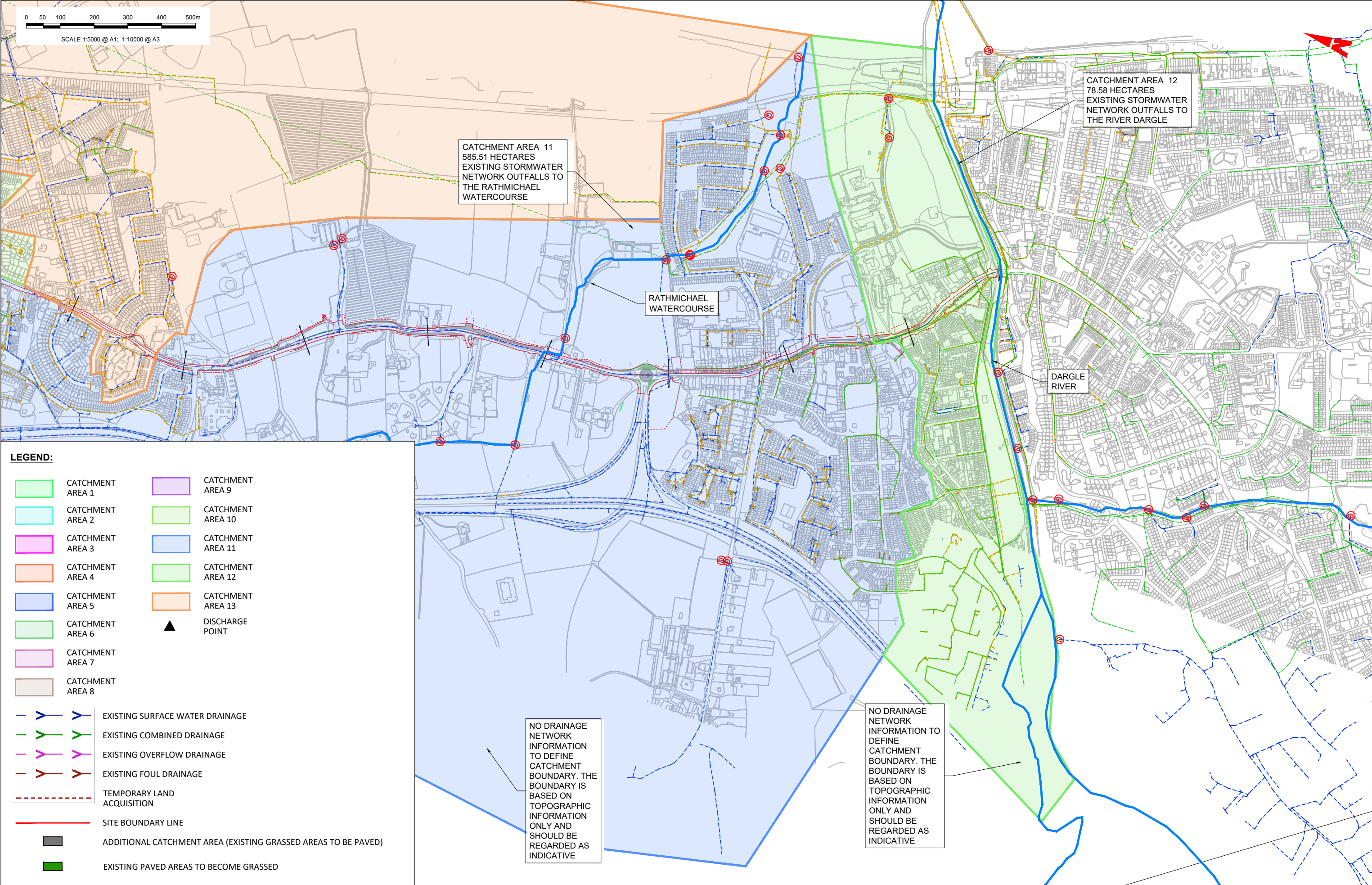
Rev	Date	Dm	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

 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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_ssd\legintl_bayard\20148280\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1010.dwg



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

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_150 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



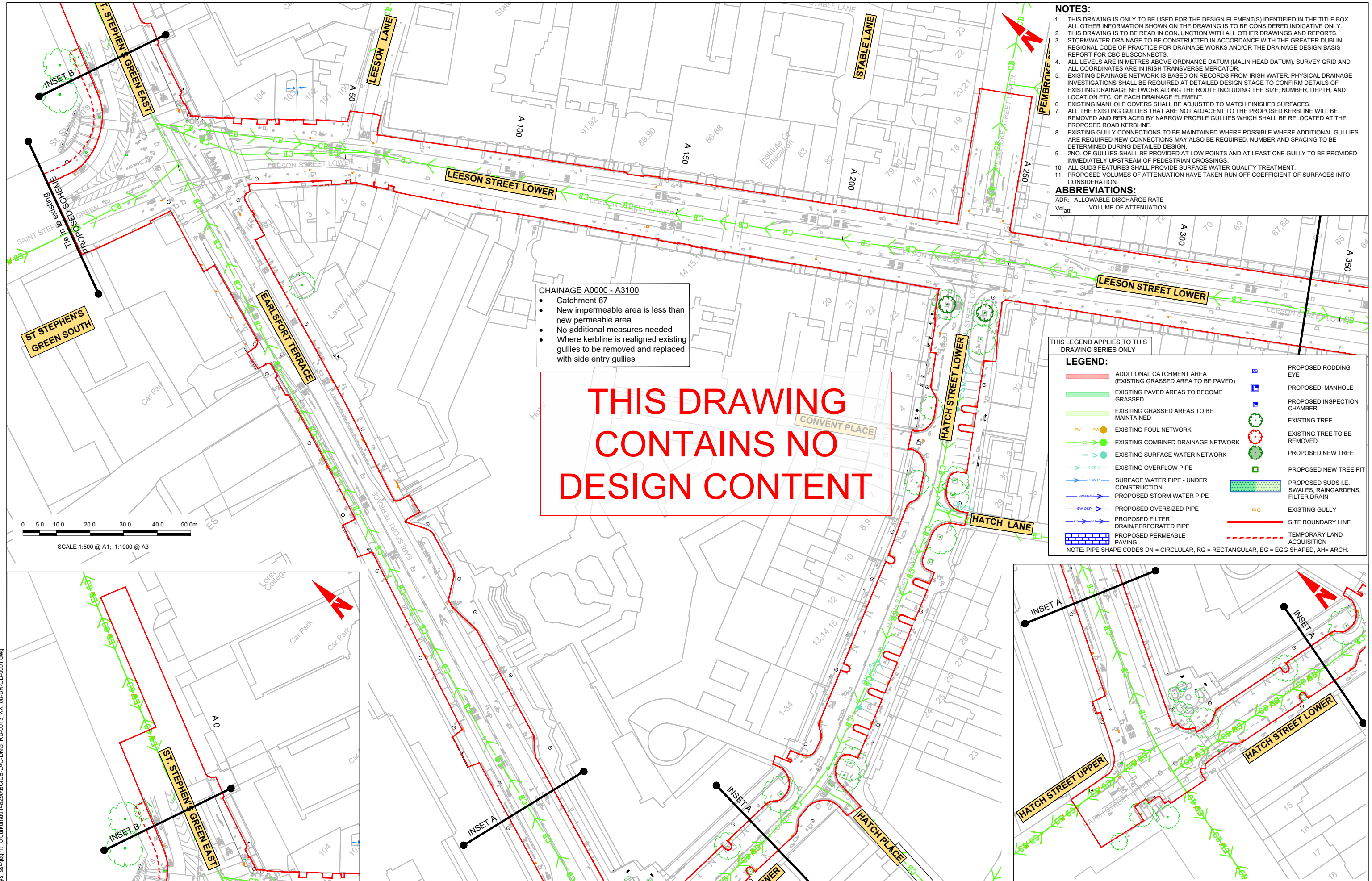
Rev	Date	Drn	Chk'd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

Date	Scale	Drawn	Checked	Approved
08/05/2023	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-1011	11 of 11	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_asd\legintl_bayard\2d\0148280\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-1011.dwg



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

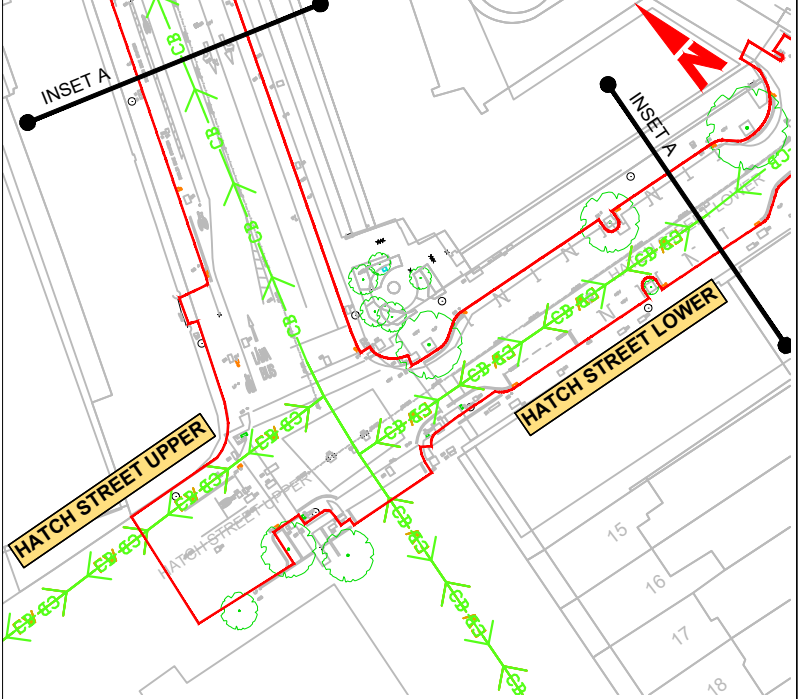
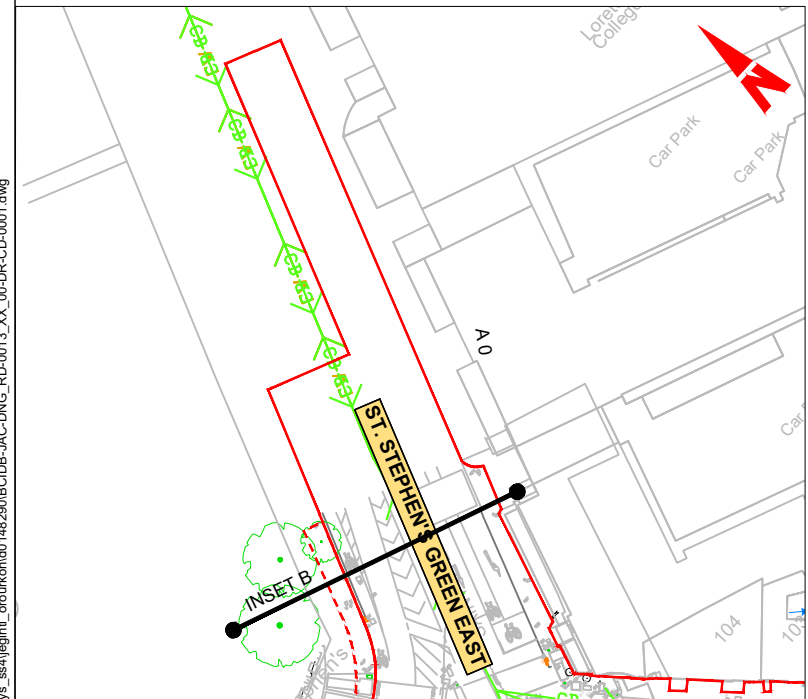
THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

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



Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI/NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

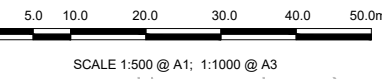
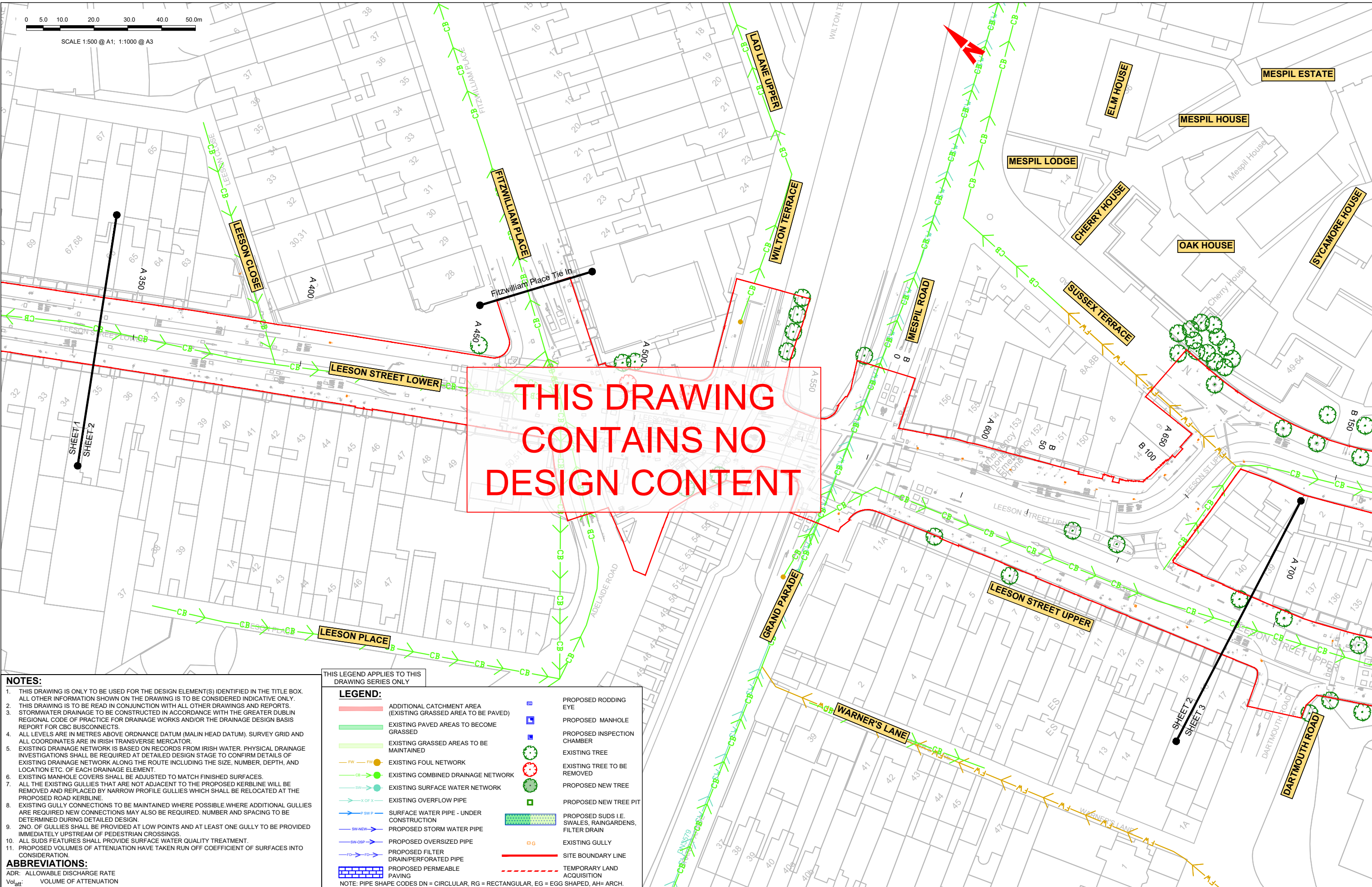
Client: **NTA**
 Ódarás Náisiúnta Iompair
 National Transport Authority

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



THIS DRAWING
CONTAINS NO
DESIGN CONTENT

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

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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

<p>LEGEND:</p> <ul style="list-style-type: none"> — 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 	<ul style="list-style-type: none"> ■ 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 — PROPOSED FILTER DRAIN/PERFORATED PIPE — PROPOSED PERMEABLE PAVING 	<ul style="list-style-type: none"> — PROPOSED NEW TREE PIT ■ PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN — EXISTING GULLY — PROPOSED FILTER DRAIN/PERFORATED PIPE — PROPOSED PERMEABLE PAVING
---	--	---

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

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

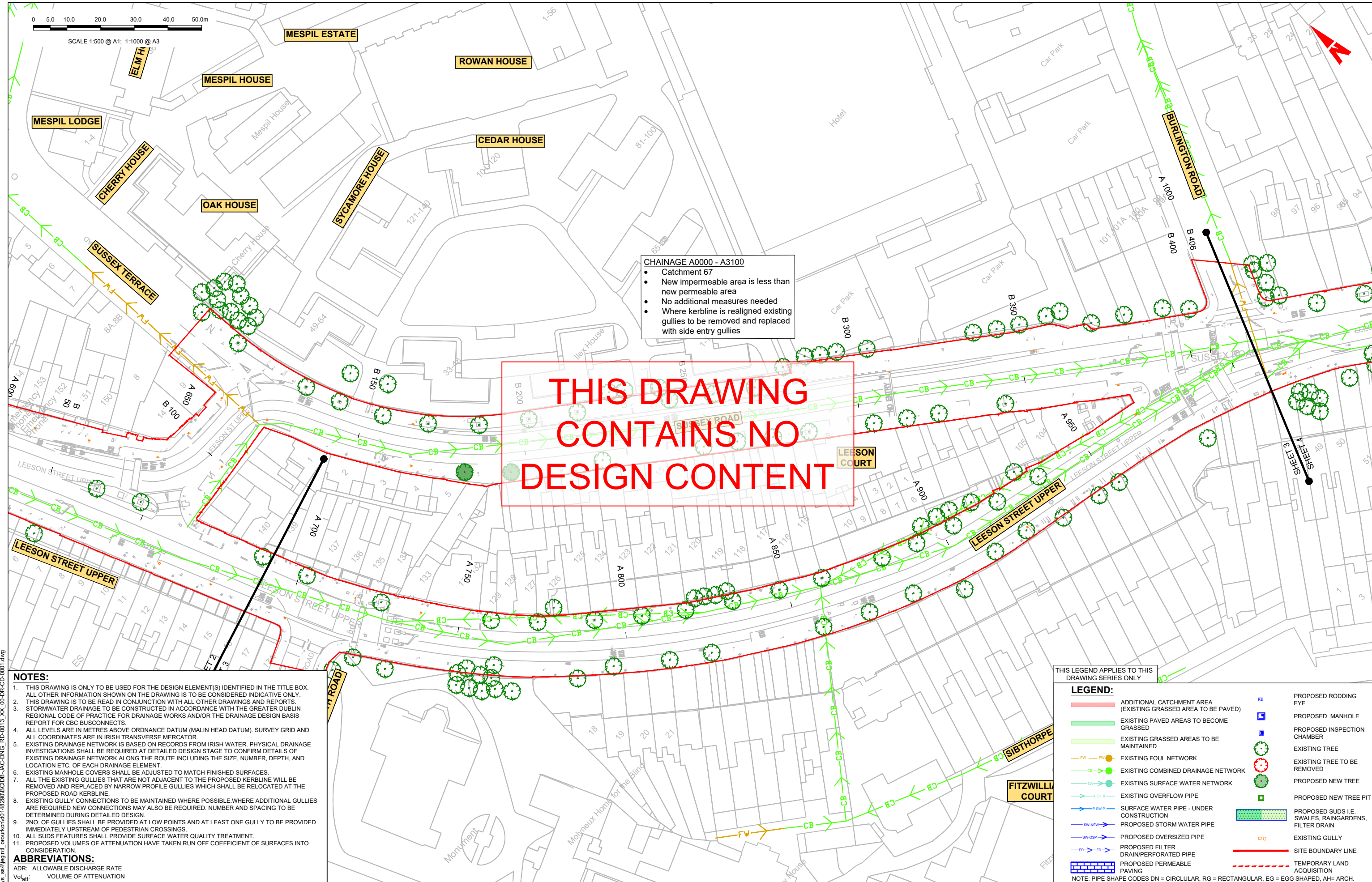
Project Ireland 2040
 Building Ireland's Future

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

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

Programme Title		Drawing Title	
BUSCONNECTS DUBLIN 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-0002	02 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

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/PERFORMED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED PERMEABLE PAVING		

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI/NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

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

Engineering Designer: **Jacobs**

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

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

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

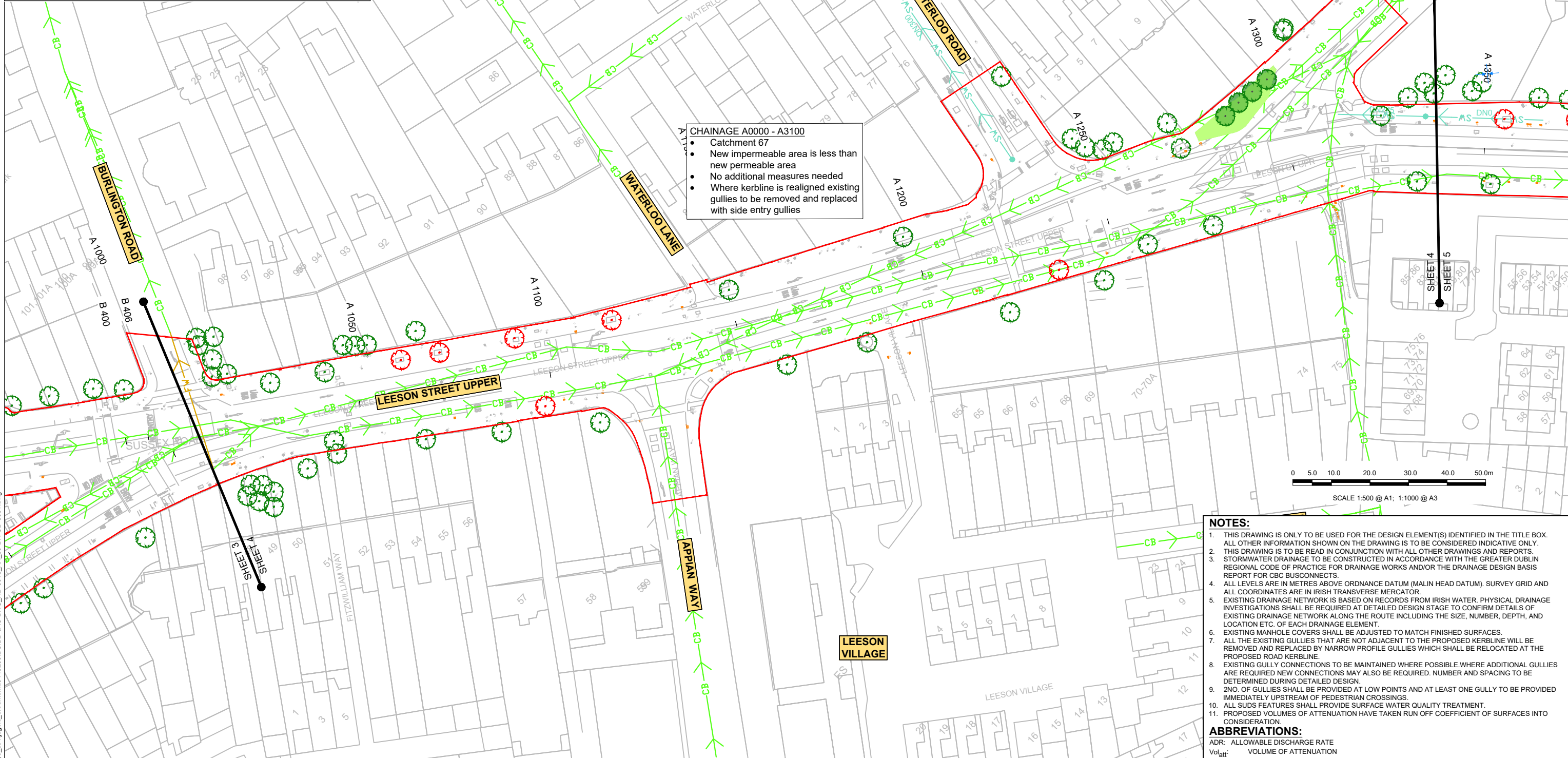
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0003	03 of 54	A	M01

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

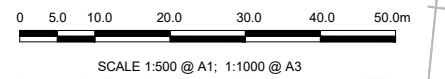
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE 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 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



- NOTES:**
1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. ZNO. 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

C:\pwworking\jacobs_uk_highways_asd\legint_0roukon\0148290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001.dwg

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

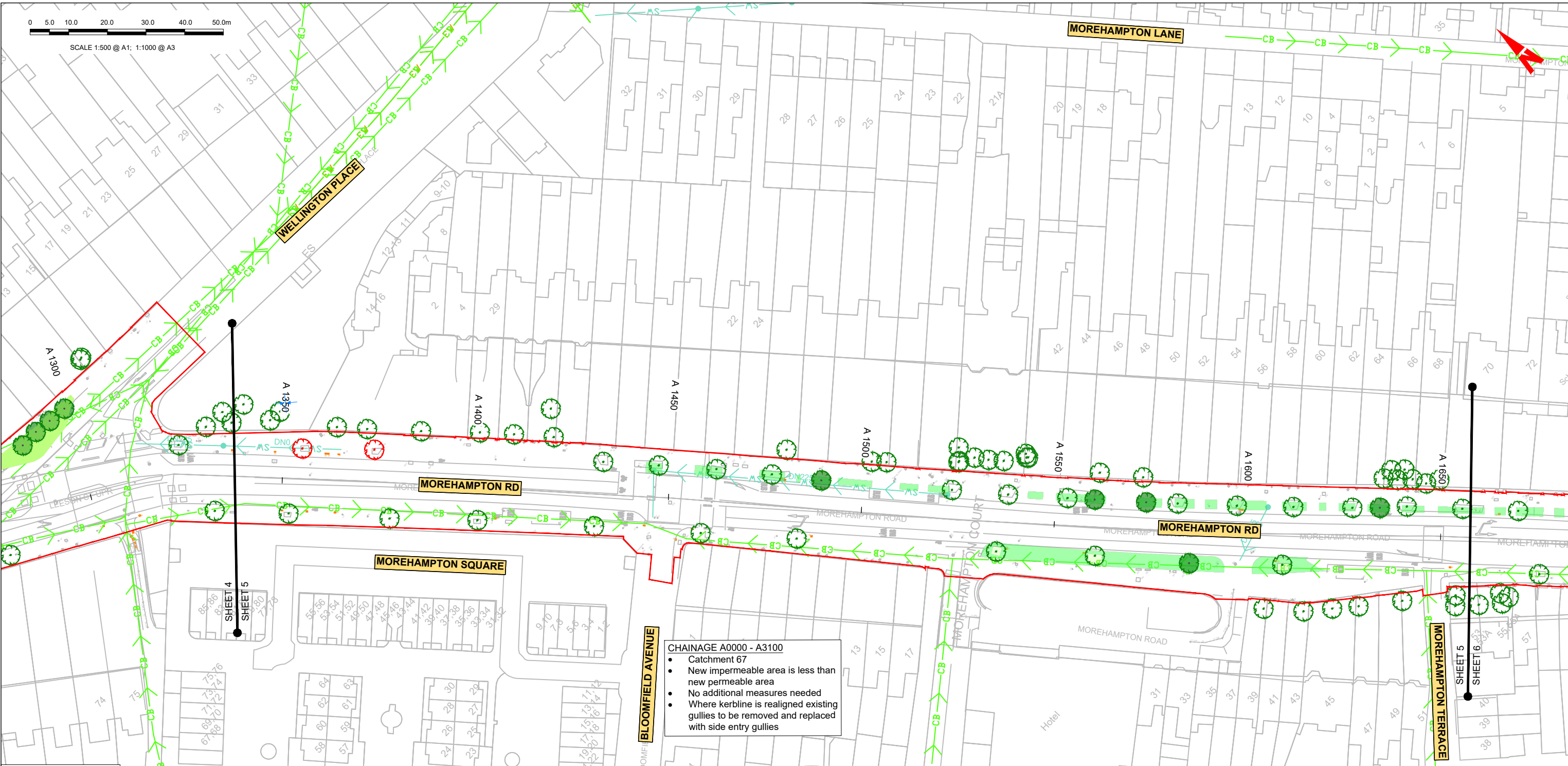
Engineering Designer: **Jacobs**

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-0004	Sheet Number 04 of 54	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

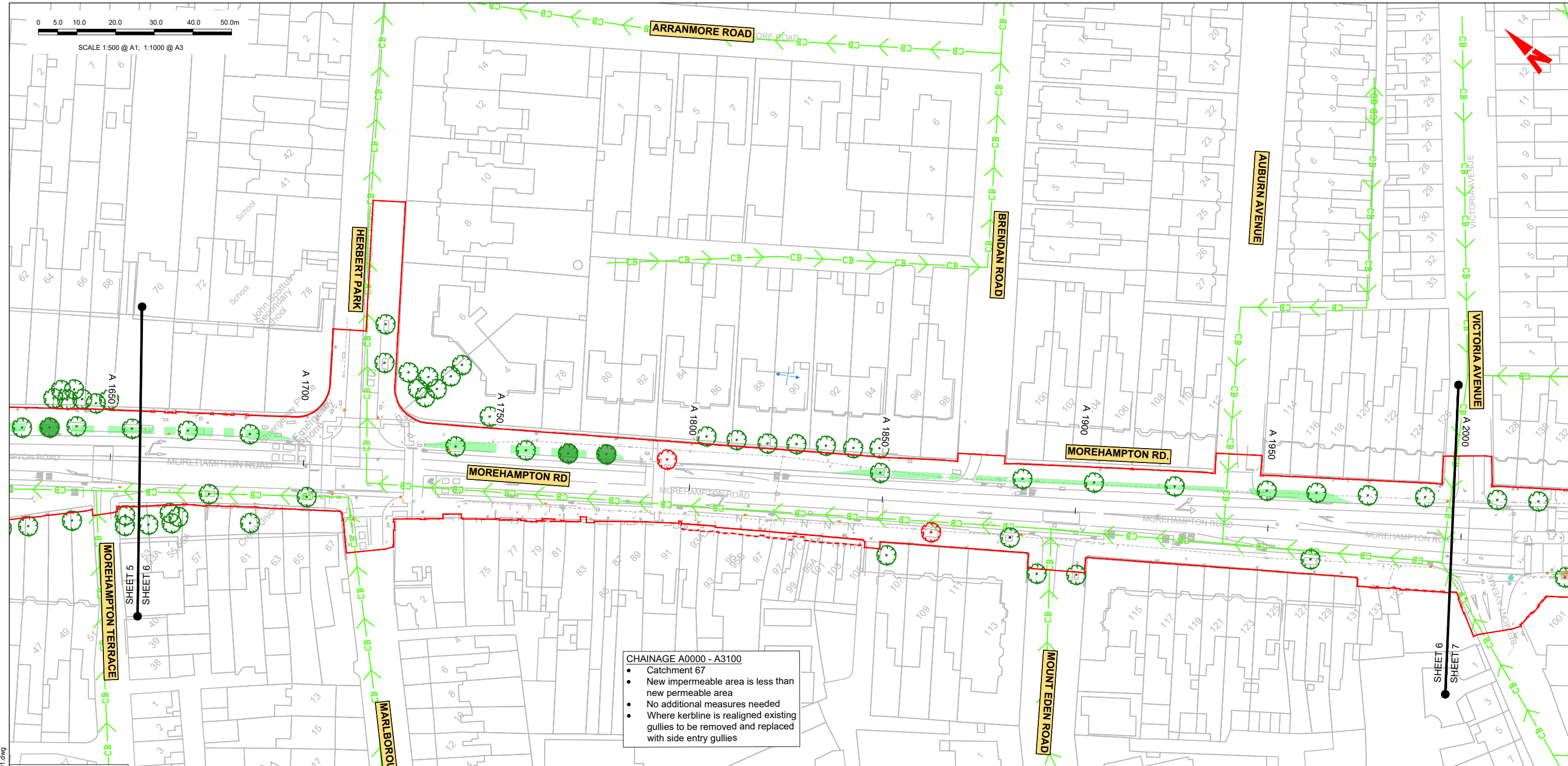
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

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

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:**
- THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 - STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 - ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 - EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 - ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 - EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 - ZNO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 - PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

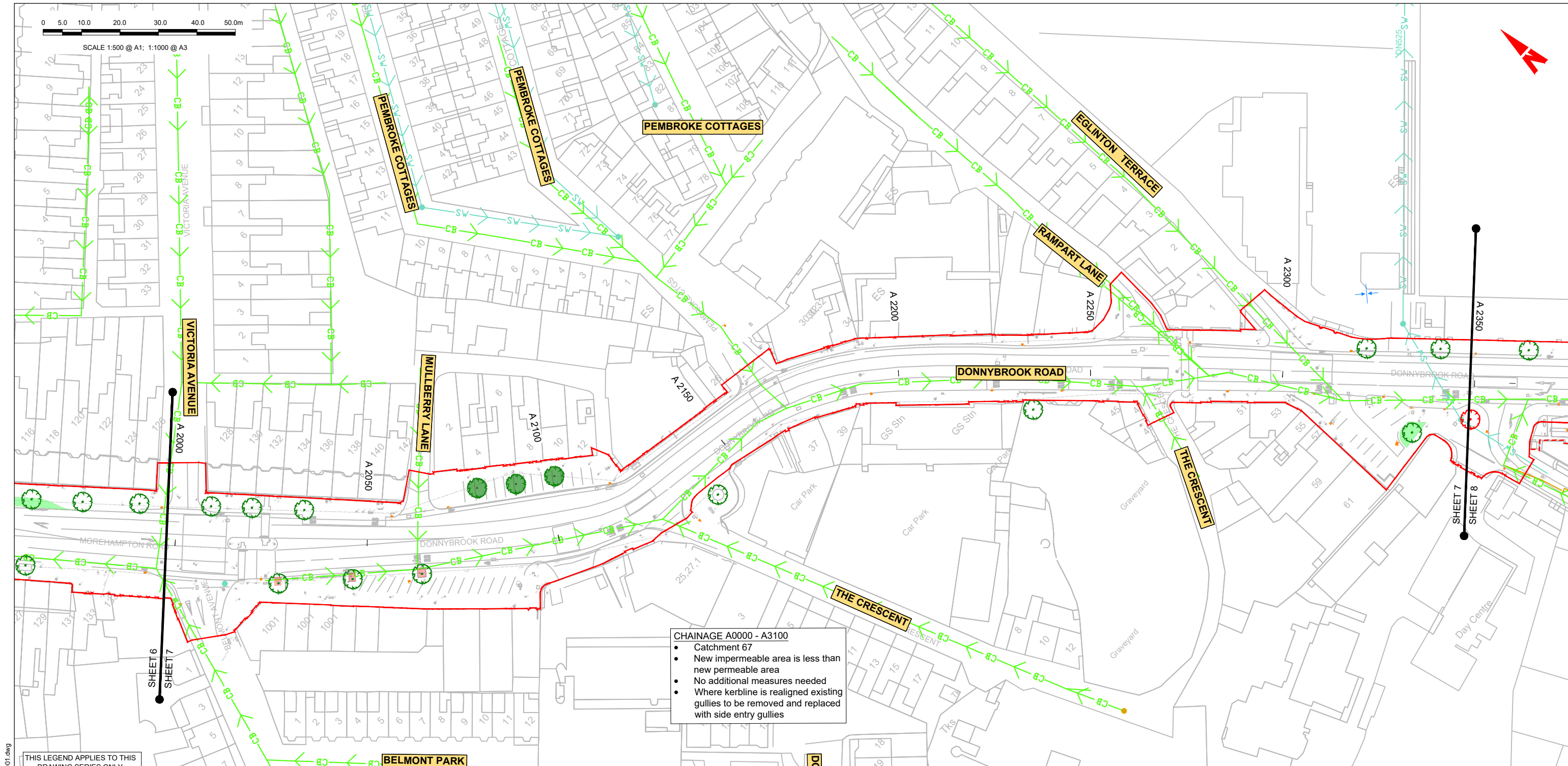
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

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			

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND SPECIFICATIONS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK 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

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OS_NMA_180 National Transport Authority. All elevations are in metres and relate to OS Good Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.



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-0007	Sheet Number: 07 of 54	Status: A	Rev: M01

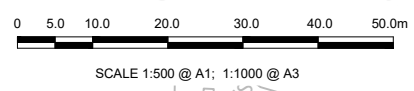
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{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

- 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 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 = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH = ARCH.

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

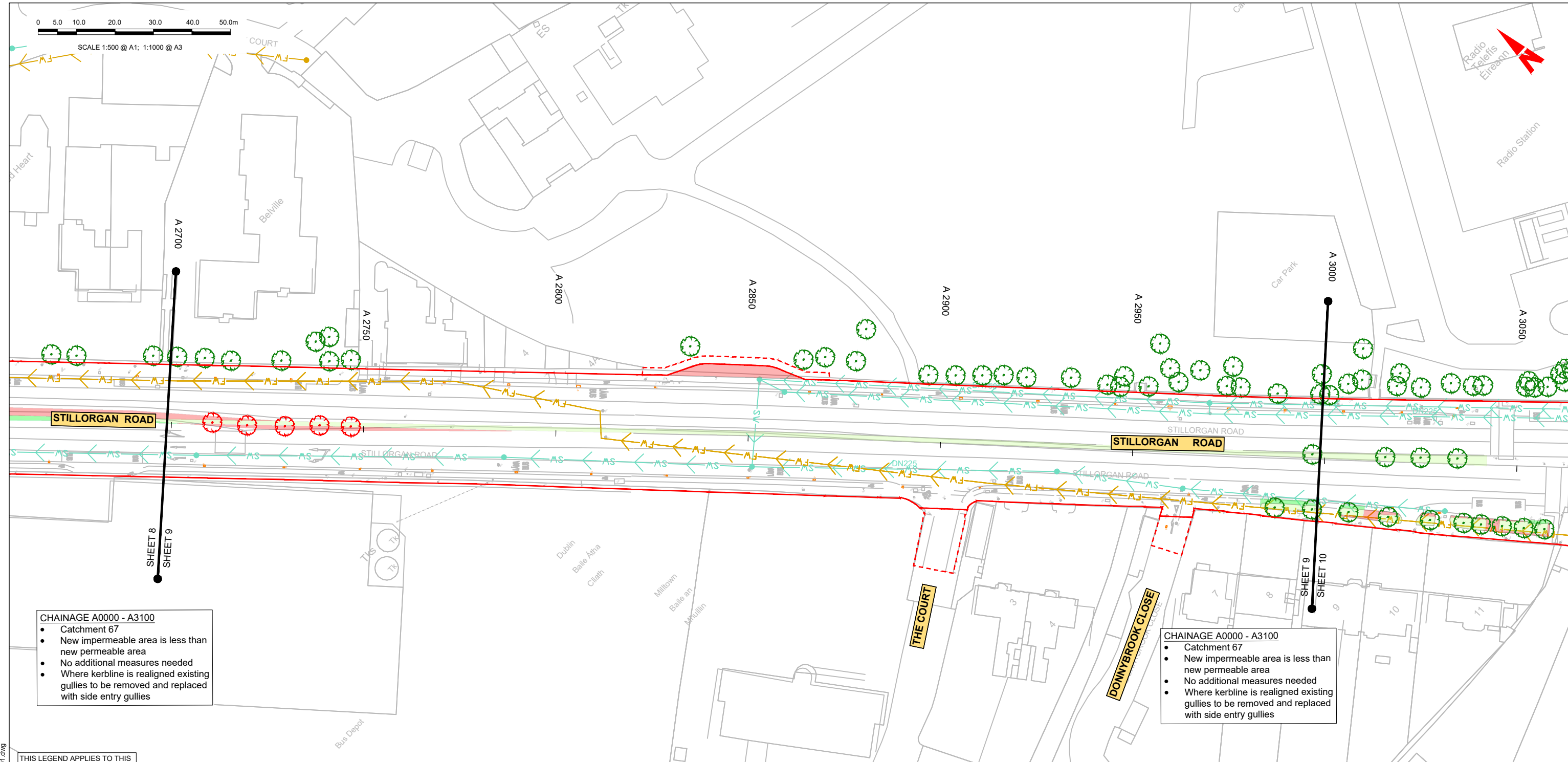
Client: **NTA**
Ódarás Náisiúnta Iompair
National Transport Authority

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	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0008	08 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

- 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 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 = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM), SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI/NMA_160 National Transport Authority. All elevations are in metres and relate to OSG Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

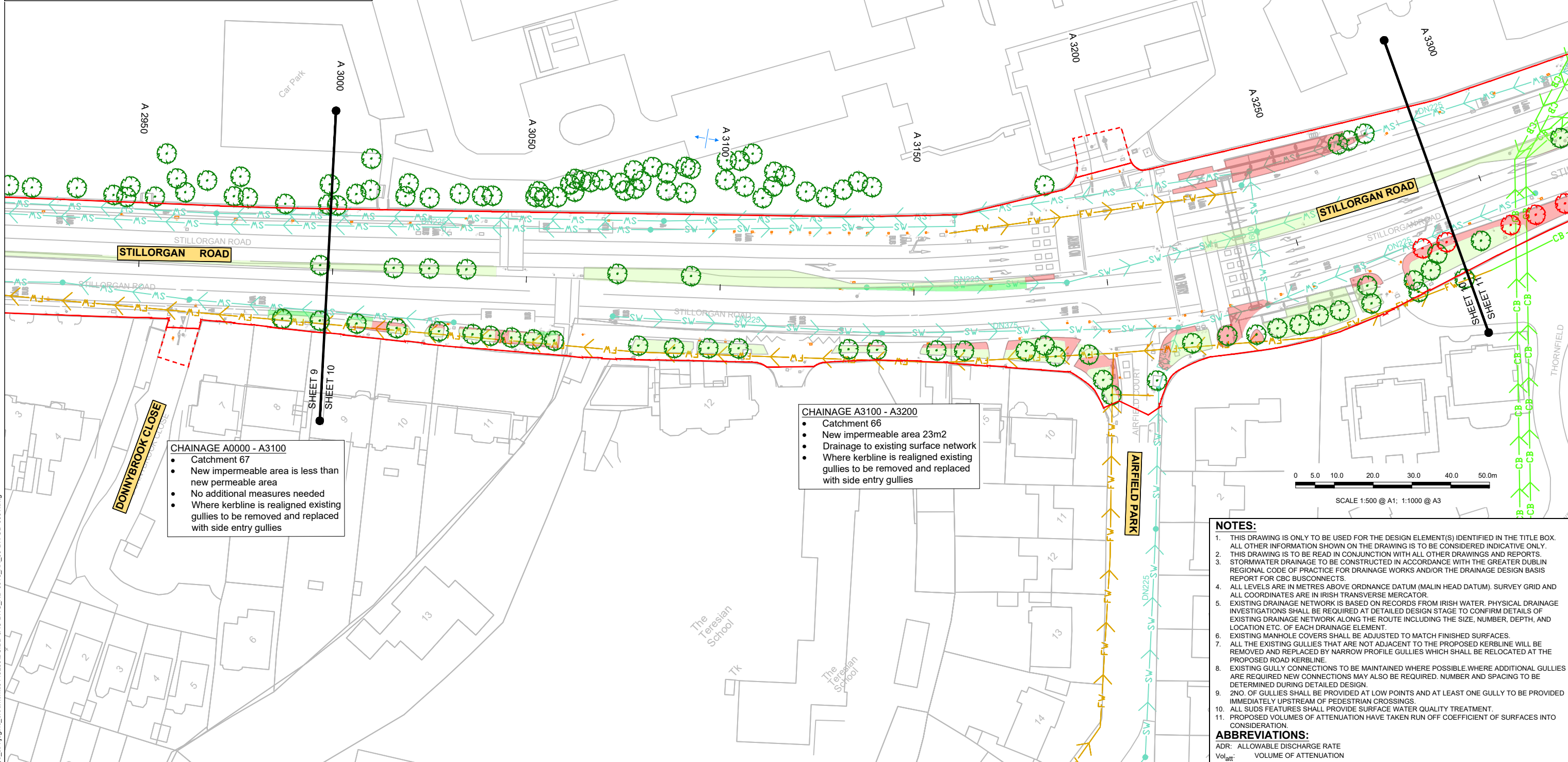
Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

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	

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:**
- THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 - STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 - ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 - EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 - ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 - EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 - ZNO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 - ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 - PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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-0010	Sheet Number 10 of 54	Status A	Rev M01

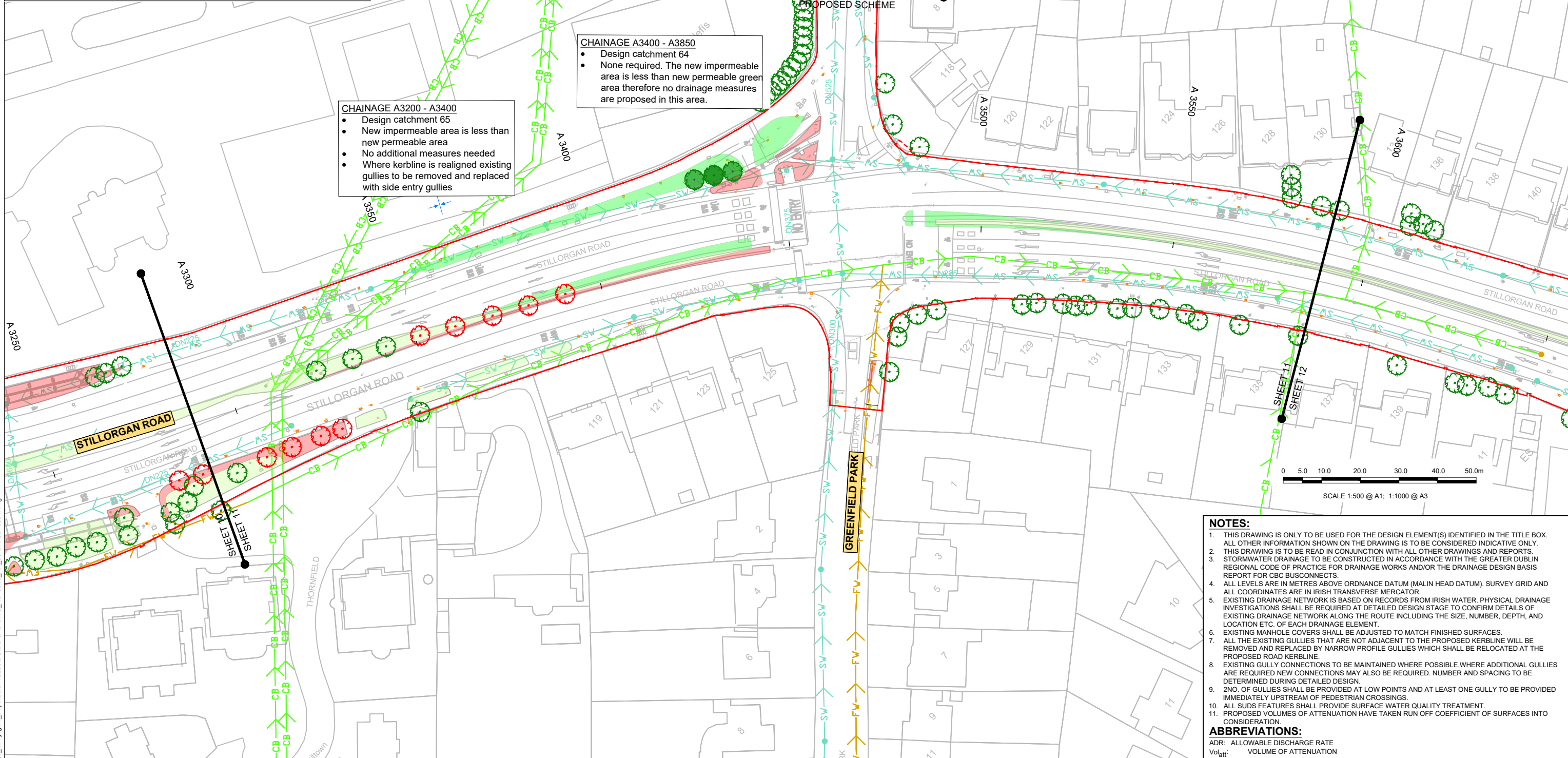
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		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.



Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
 e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

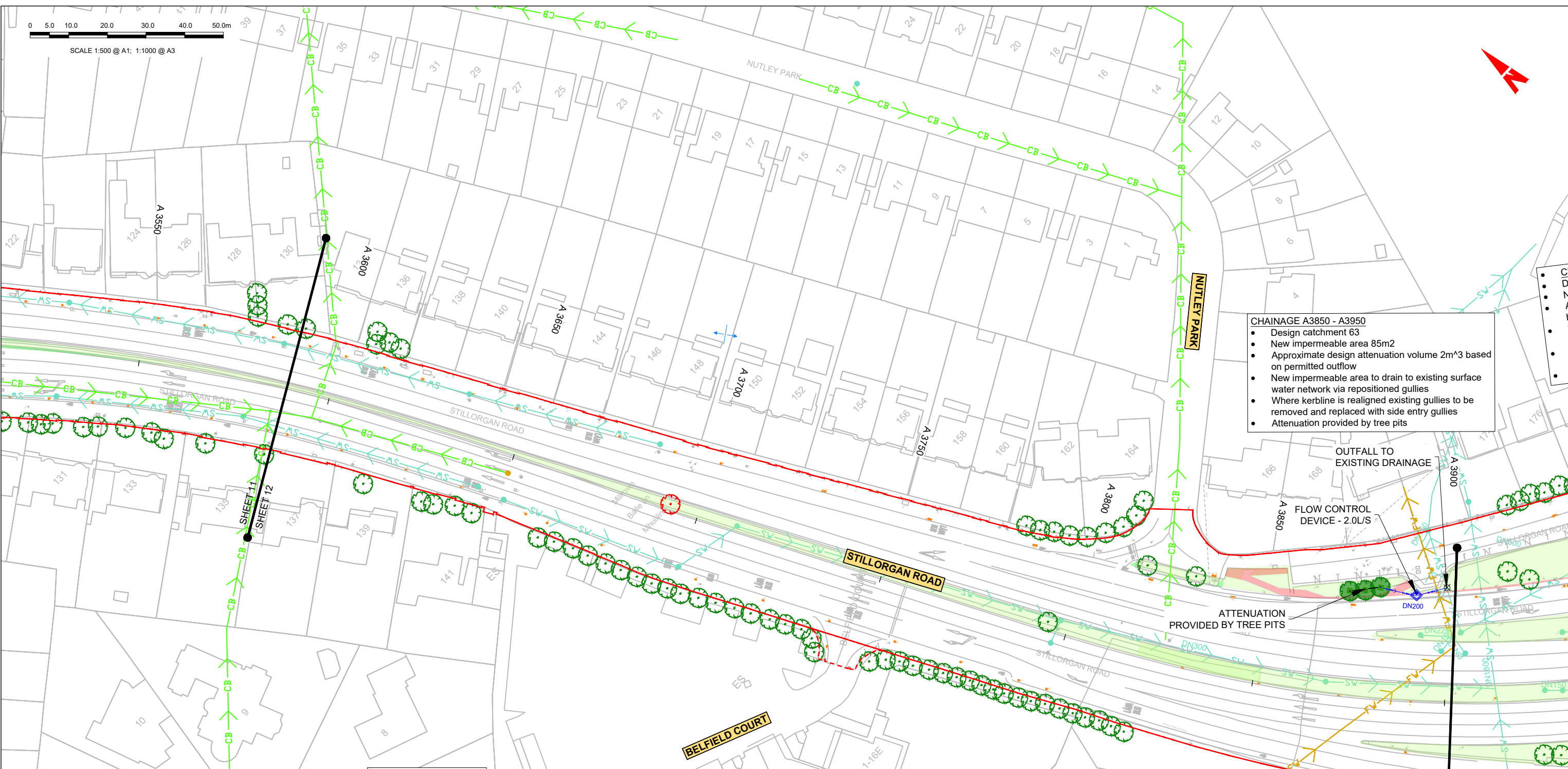
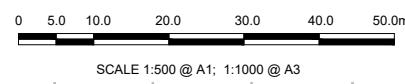
Project Code: BCIDB | Originator Code: JAC | OMS Code:

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	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0011	11 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

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.

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**

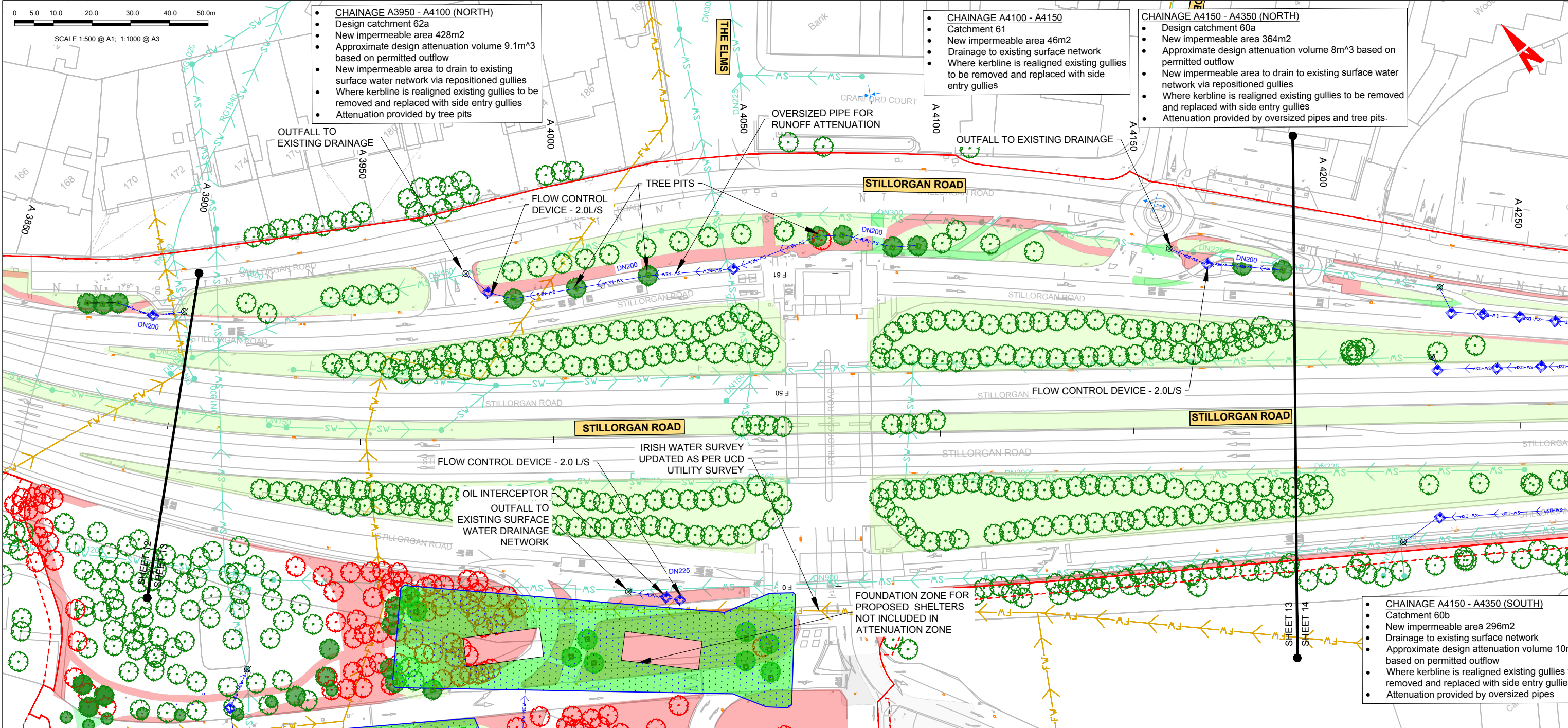
Date: 08/05/2023
Scale: 1:500 @ A1, 1:1000 @ A3
Project Code: BCIDB
Originator Code: JAC

Drawn: BD
Checked: NS
Approved: RS

Programme Title BUSCONNECTS DUBLIN		Drawing Title CORE BUS CORRIDORS INFRASTRUCTURE WORKS	
Drawing File Name BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0012			
Sheet Number 12 of 54		Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_asd\legint_0roukon\0148290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001.dwg



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

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.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.
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

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-OSI_NMA_190 National Transport Authority. All elevations are in metres and relate to OSI Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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	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		

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

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-OS_NMA_190 National Transport Authority. All elevations are in metres and relate to OSG Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSG active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

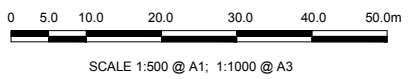
Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0014	14 of 54	A	M01

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

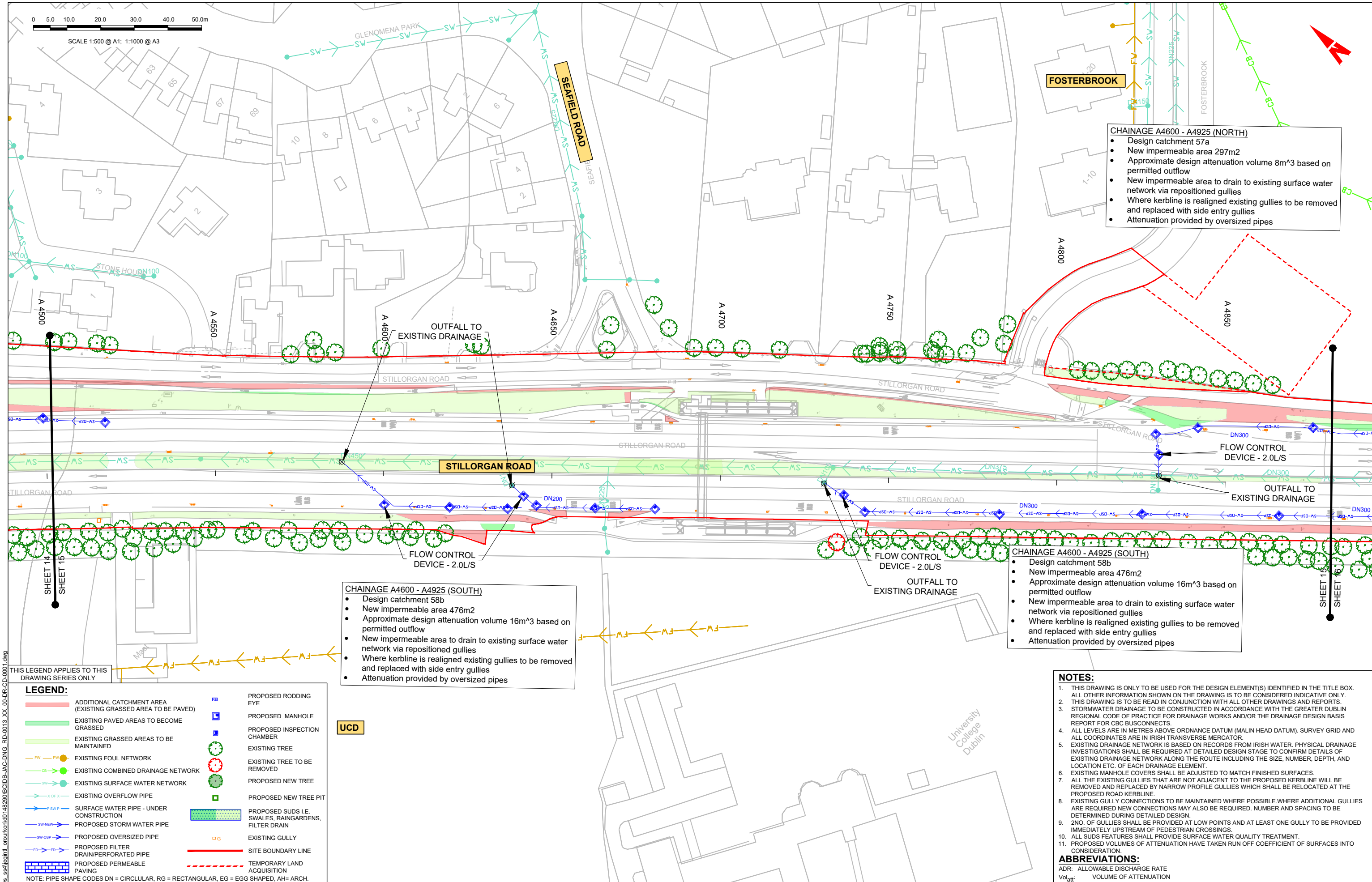
ABBREVIATIONS:

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



DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_ssd\legintf_courcour\00146290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001.dwg



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:

	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.

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

<p>© National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.</p> <p>This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.</p> <p>O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.</p> <p>Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.</p>		<p>The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.</p>		<table border="1"> <thead> <tr> <th>Rev</th> <th>Date</th> <th>Drn</th> <th>Chk'd</th> <th>App'd</th> <th>Description</th> </tr> </thead> <tbody> <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> </tbody> </table>		Rev	Date	Drn	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>		<p>Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p>	
Rev	Date	Drn	Chk'd	App'd	Description																		
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING																		
<p>Date: 08/05/2023</p> <p>Scale: 1:50@ A1 1:100@ A3</p> <p>Project Code: BCIDB</p> <p>Originator Code: JAC</p>		<p>Drawn: BD</p> <p>Checked: NS</p> <p>Approved: RS</p>		<p>Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS</p>		<p>Drawing File Name: BCIDB-JAC-DNG RD-0013_XX_00-DR-CD-0015</p> <p>Sheet Number: 15 of 54</p> <p>Status: A</p> <p>Rev: M01</p>																	

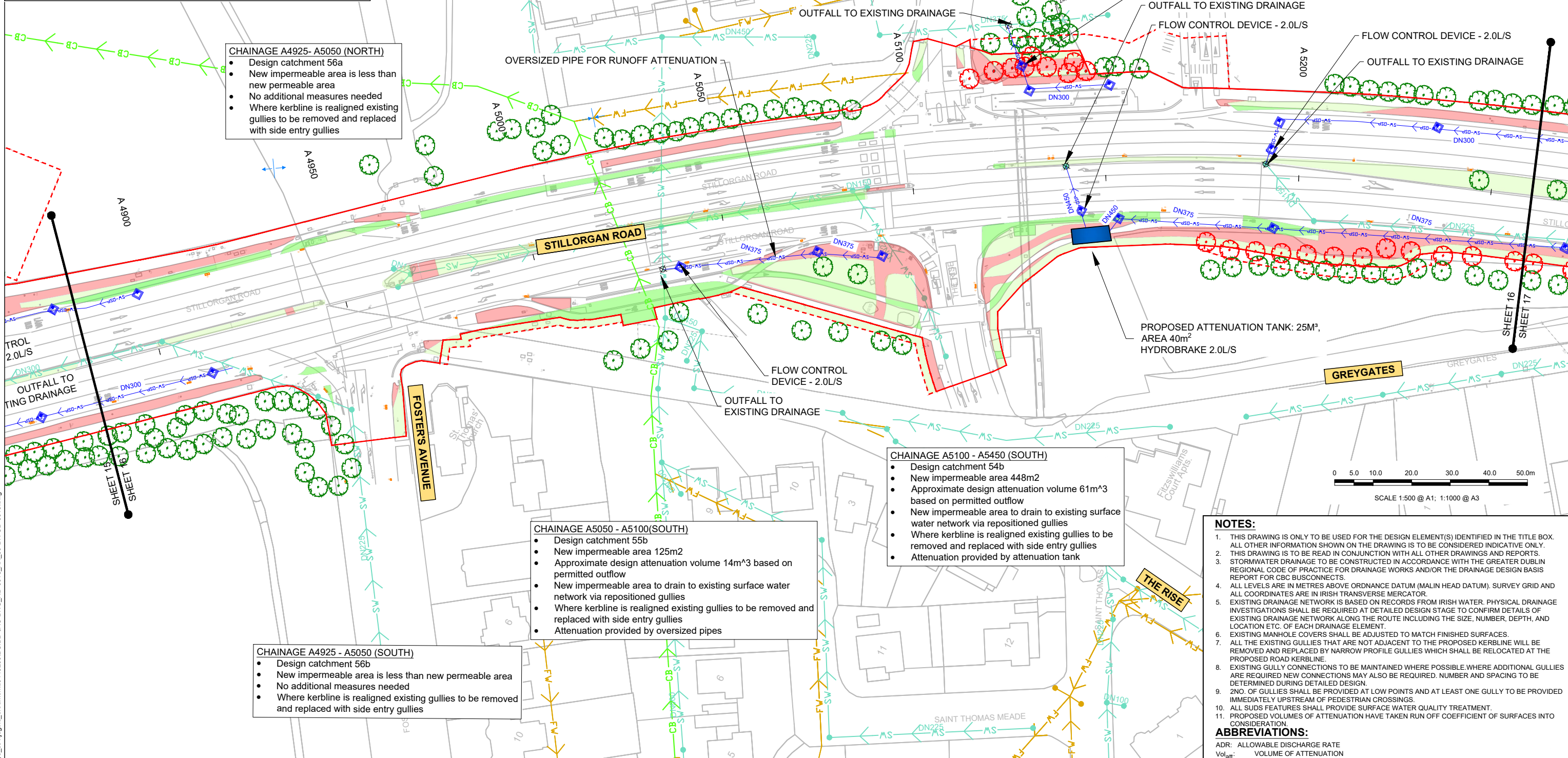
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		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 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)

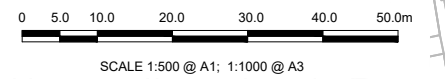
- Design catchment 56b
- New impermeable area is less than new permeable area
- No additional measures needed
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

NOTES:

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

ABBREVIATIONS:

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



Disclaimer
a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
b. This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_160 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.
d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Project Ireland 2040
Building Ireland's Future

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

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

Engineering Designer: **Jacobs**

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

Drawn: BD
Checked: NS
Approved: RS

Project Code: BCIDB
Originator Code: JAC
OMS Code:

Programme Title	Drawing Title
BUSCONNECTS DUBLIN 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-0016	16 of 54	A	M01

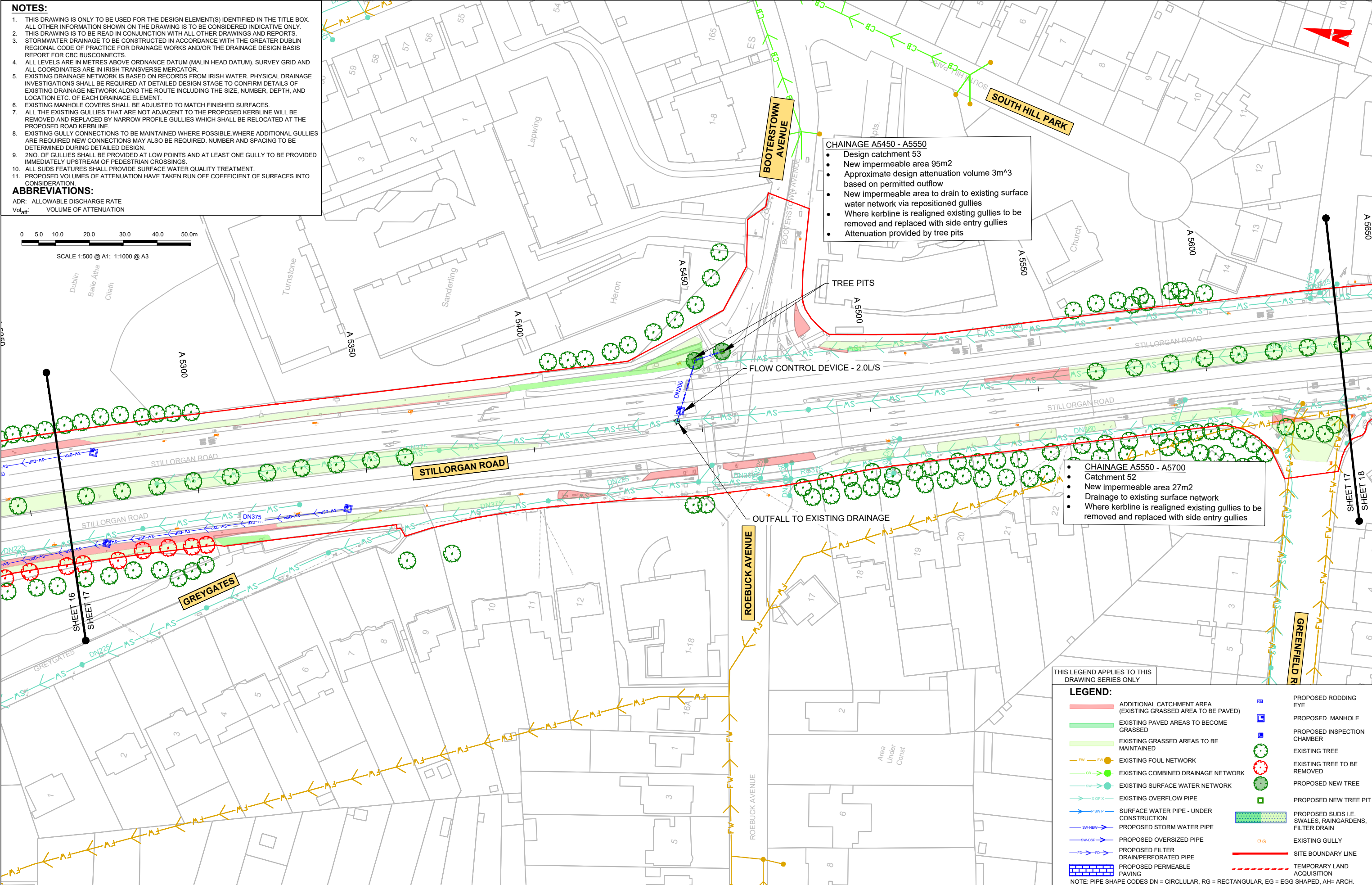
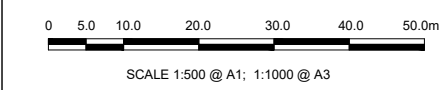
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. ZNO. 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 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.

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI/NMA_160 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

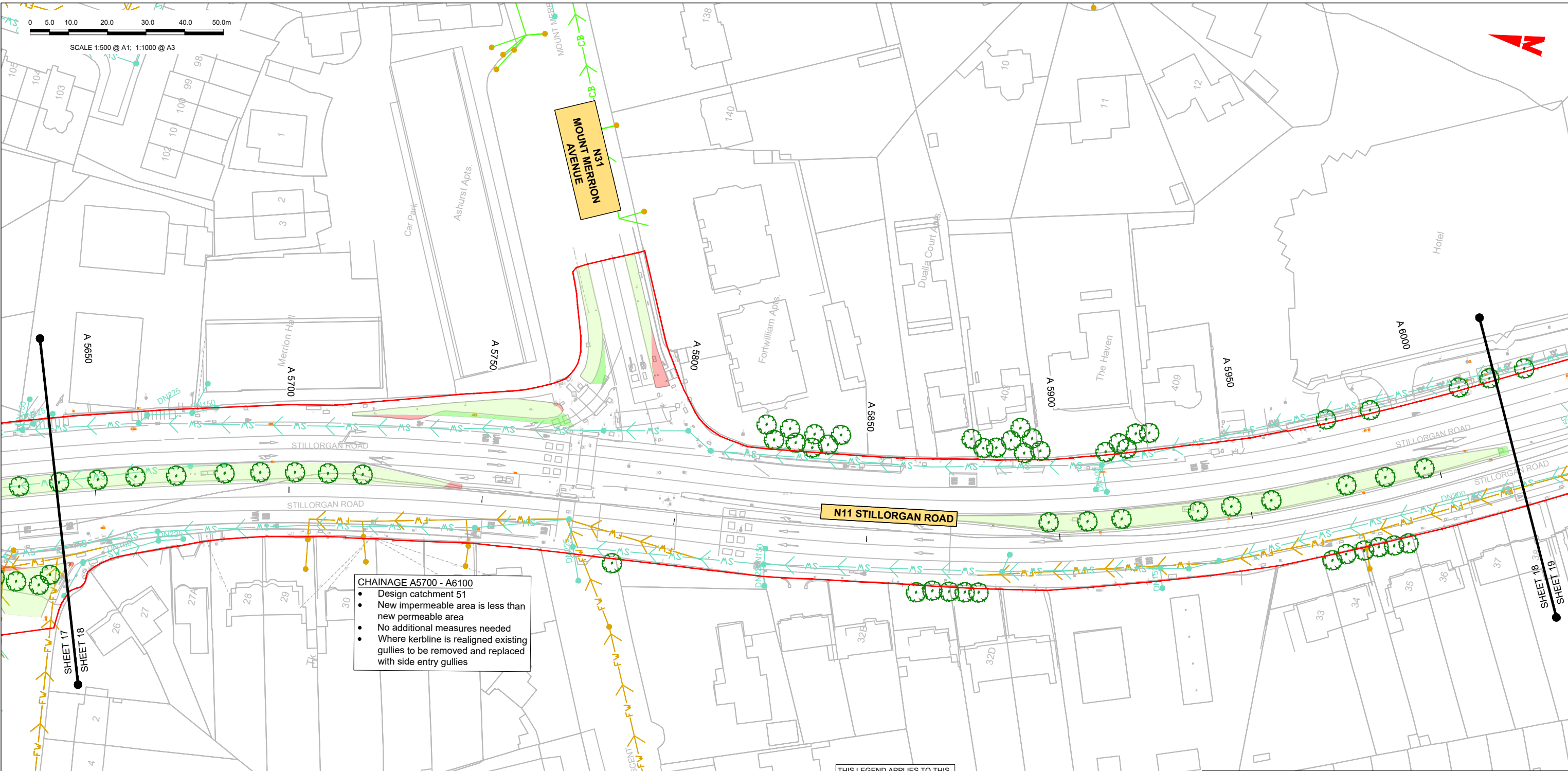
Project Code: BCIDB | Originator Code: JAC | OMS Code:

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-0017	17 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



CHAINAGE A5700 - A6100

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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

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

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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS (AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS).
4. ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Volatt: VOLUME OF ATTENUATION

C:\pwworking\jacobs_uk_highways_asd\jgintl_croukonk0148290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0016.dwg

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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**

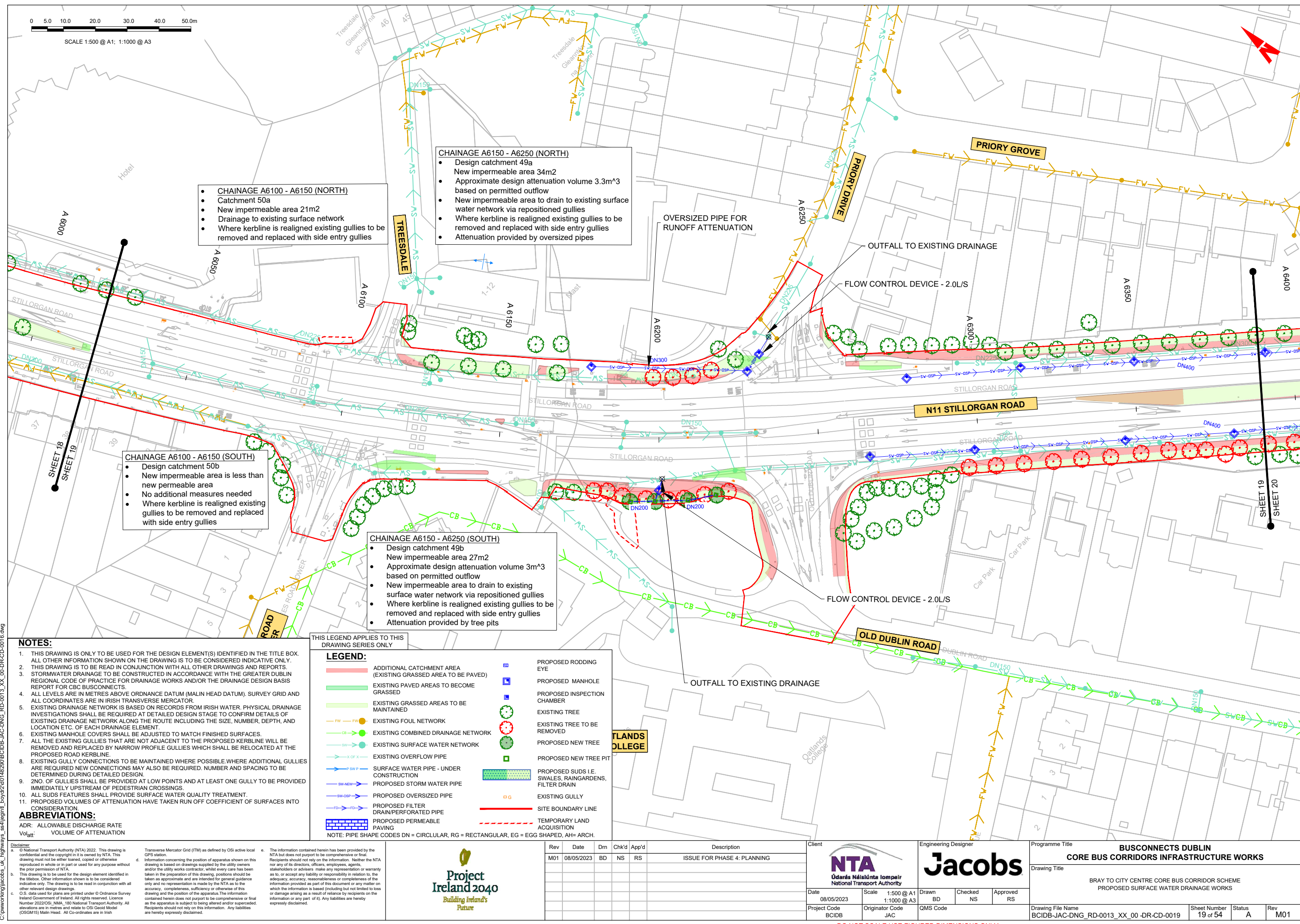
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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-0018	18 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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



CHAINAGE A6100 - A6150 (NORTH)

- Catchment 50a
- New impermeable area 21m²
- Drainage to existing surface network
- Where kerblines are realigned existing gullies to be removed and replaced with side entry gullies

CHAINAGE A6150 - A6250 (NORTH)

- Design catchment 49a
- New impermeable area 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 are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

CHAINAGE A6100 - A6150 (SOUTH)

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

CHAINAGE A6150 - A6250 (SOUTH)

- Design catchment 49b
- New impermeable area 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 are 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 CHAMBER
	EXISTING GRASSED AREAS TO BE MAINTAINED		EXISTING TREE
	EXISTING FOUL NETWORK		EXISTING TREE TO BE REMOVED
	EXISTING COMBINED DRAINAGE NETWORK		PROPOSED NEW TREE
	EXISTING SURFACE WATER NETWORK		PROPOSED NEW TREE PIT
	EXISTING OVERFLOW PIPE		PROPOSED SUDS I.E. SWALES, RAINGARDENS, FILTER DRAIN
	SURFACE WATER PIPE - UNDER CONSTRUCTION		EXISTING GULLY
	PROPOSED STORM WATER PIPE		SITE BOUNDARY LINE
	PROPOSED OVERSIZED PIPE		TEMPORARY LAND ACQUISITION
	PROPOSED FILTER DRAIN/PERFORATED PIPE		
	PROPOSED PERMEABLE PAVING		

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

NOTES:

- THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
- ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
- EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
- EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
- ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
- EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
- 2ND. 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

DISCLAIMER:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

C:\pwworking\jacobs_uk_highways_asd\legint_borad\20142820\BCIDB-JAC-DNG-RD-0013_XX_00-DR-CD-0016.dwg



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
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-0019	Sheet Number 19 of 54	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{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:

	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.

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

DISCLAIMER:

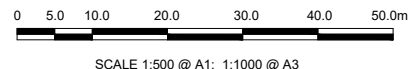
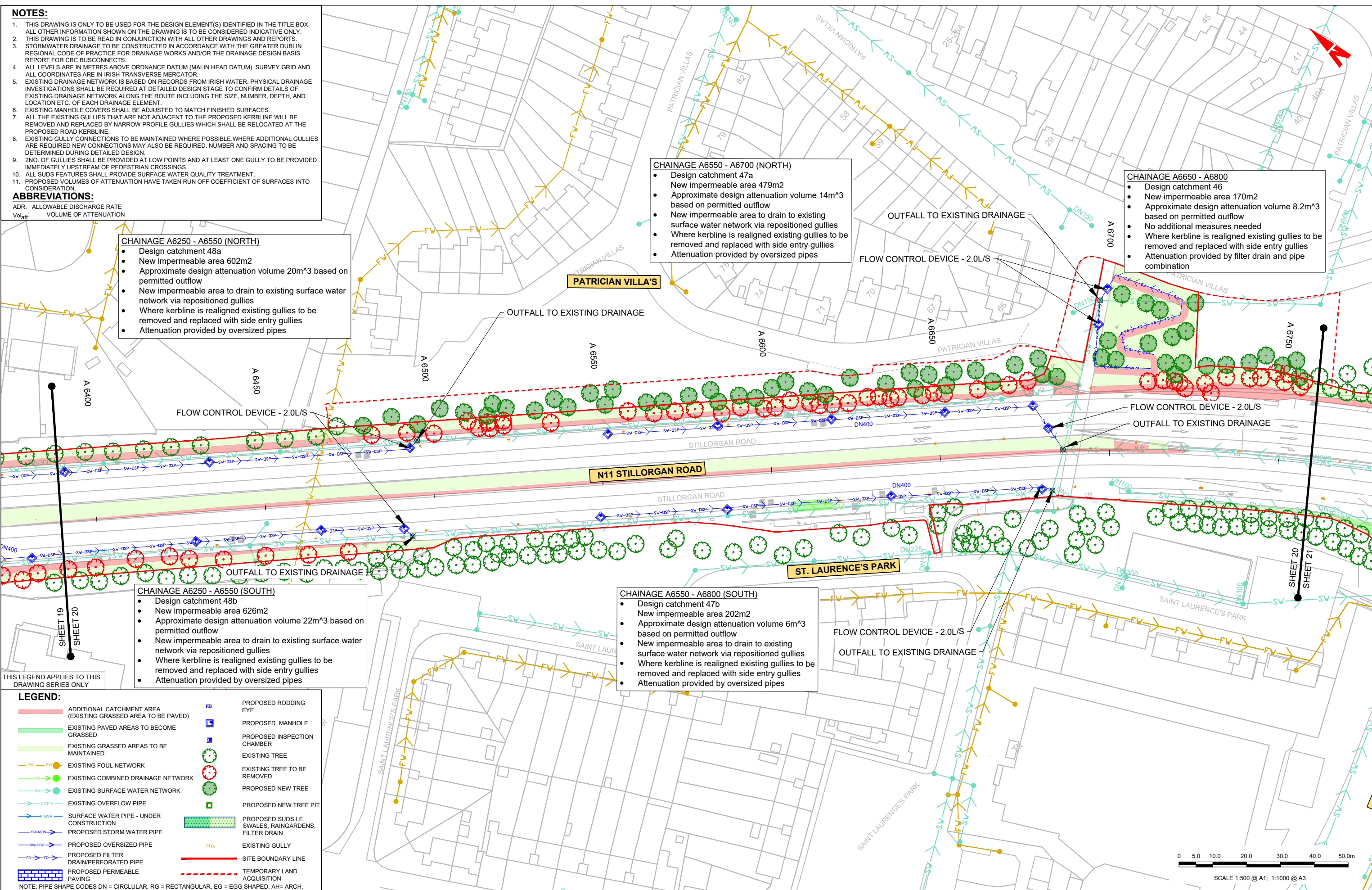
a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either copied, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under the Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



Project Ireland 2040
Building Ireland's Future

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

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

Engineering Designer: **Jacobs**

Date	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-0020	20 of 54	A	M01

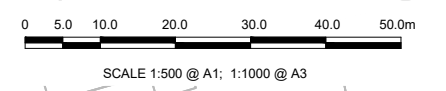
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol_{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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

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

Disclaimers

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to O.S. Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Project Ireland 2040
Building Ireland's Future

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

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

Engineering Designer: **Jacobs**

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

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

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

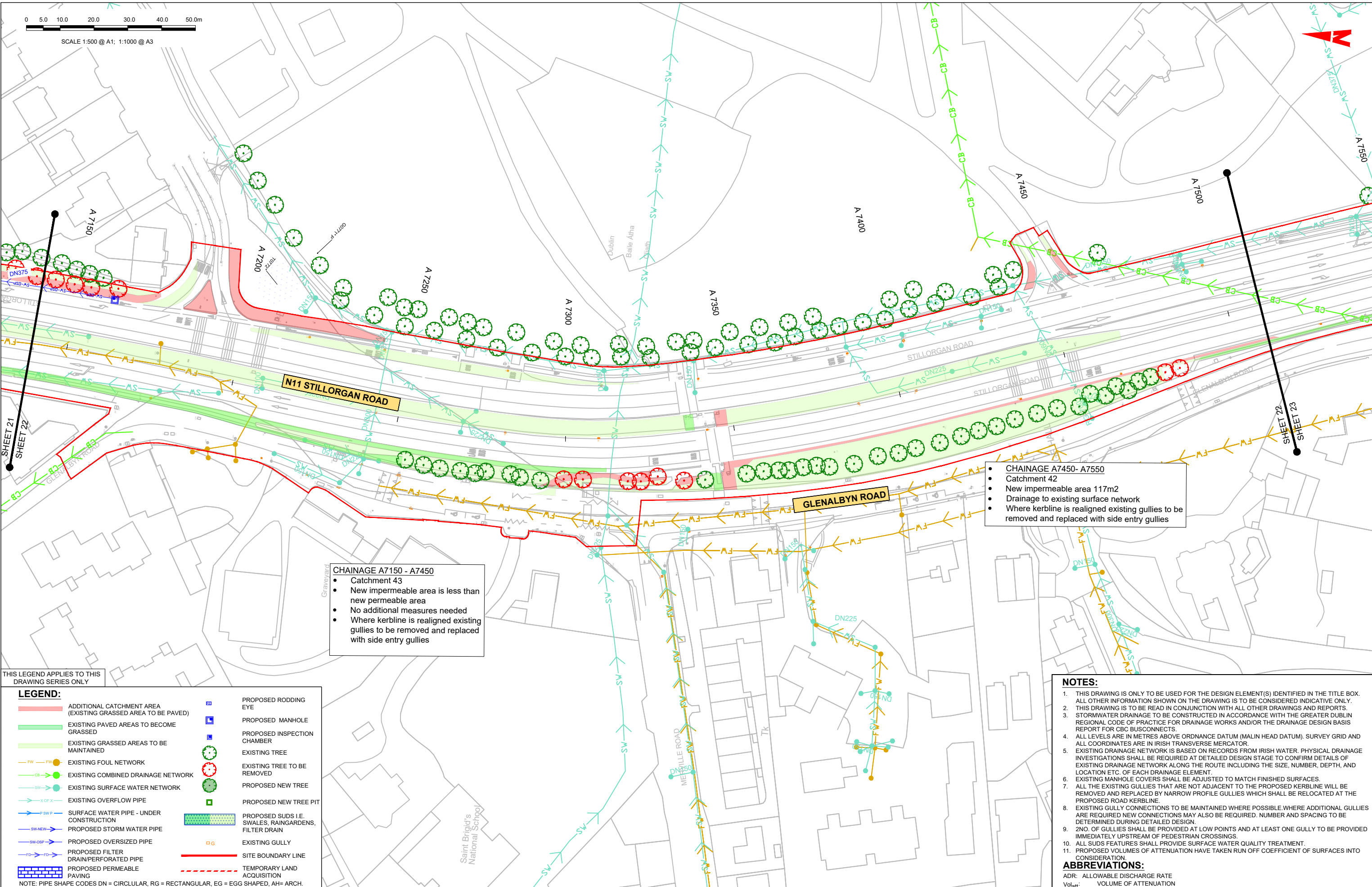
Project Code: BCIDB | Originator Code: JAC | OMS Code: [blank]

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0021	21 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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:	
	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.

NOTES:

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

ABBREVIATIONS:

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

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

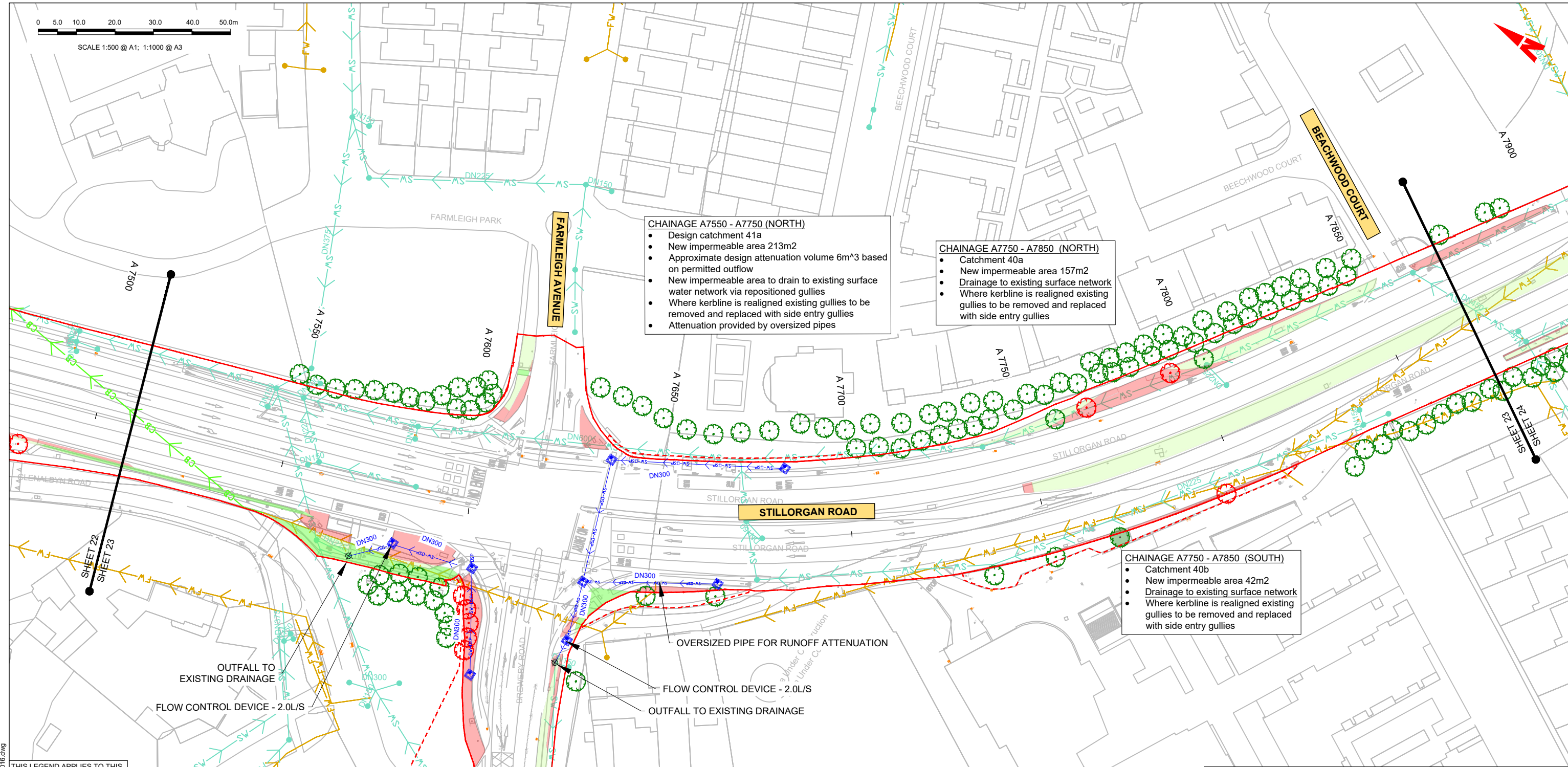
Engineering Designer: **Jacobs**

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

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_asd\legint_ouroukon\0148290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0016.dwg



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

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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.
- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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			

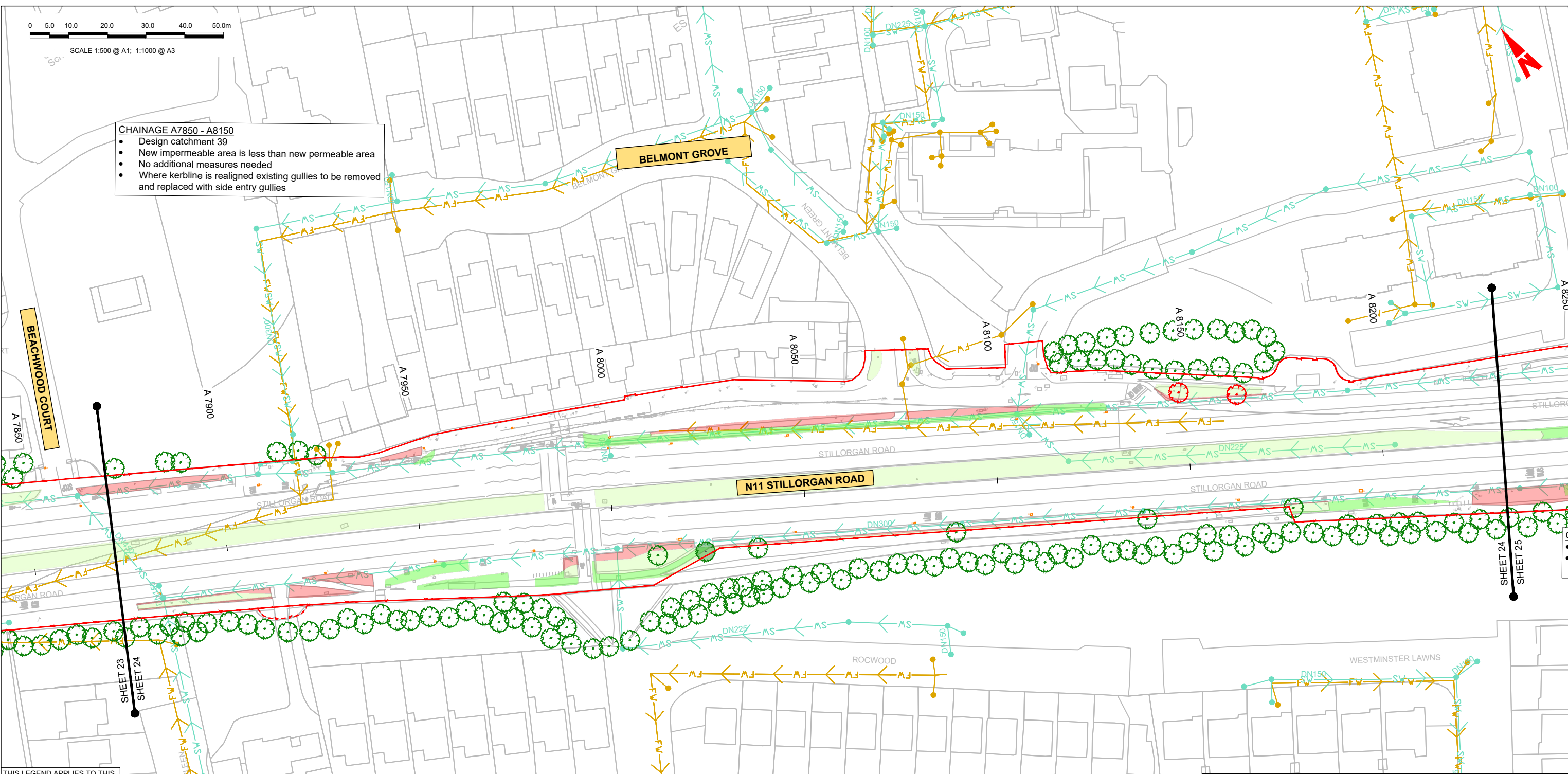
Programme Title	BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS		
Drawing Title	BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS		
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0023	23 of 54	A	M01

0 5.0 10.0 20.0 30.0 40.0 50.0m

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

CHAINAGE A7850 - A8150

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



THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

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

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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Vol: VOLUME OF ATTENUATION

Disclaimers:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

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

Engineering Designer: **Jacobs**

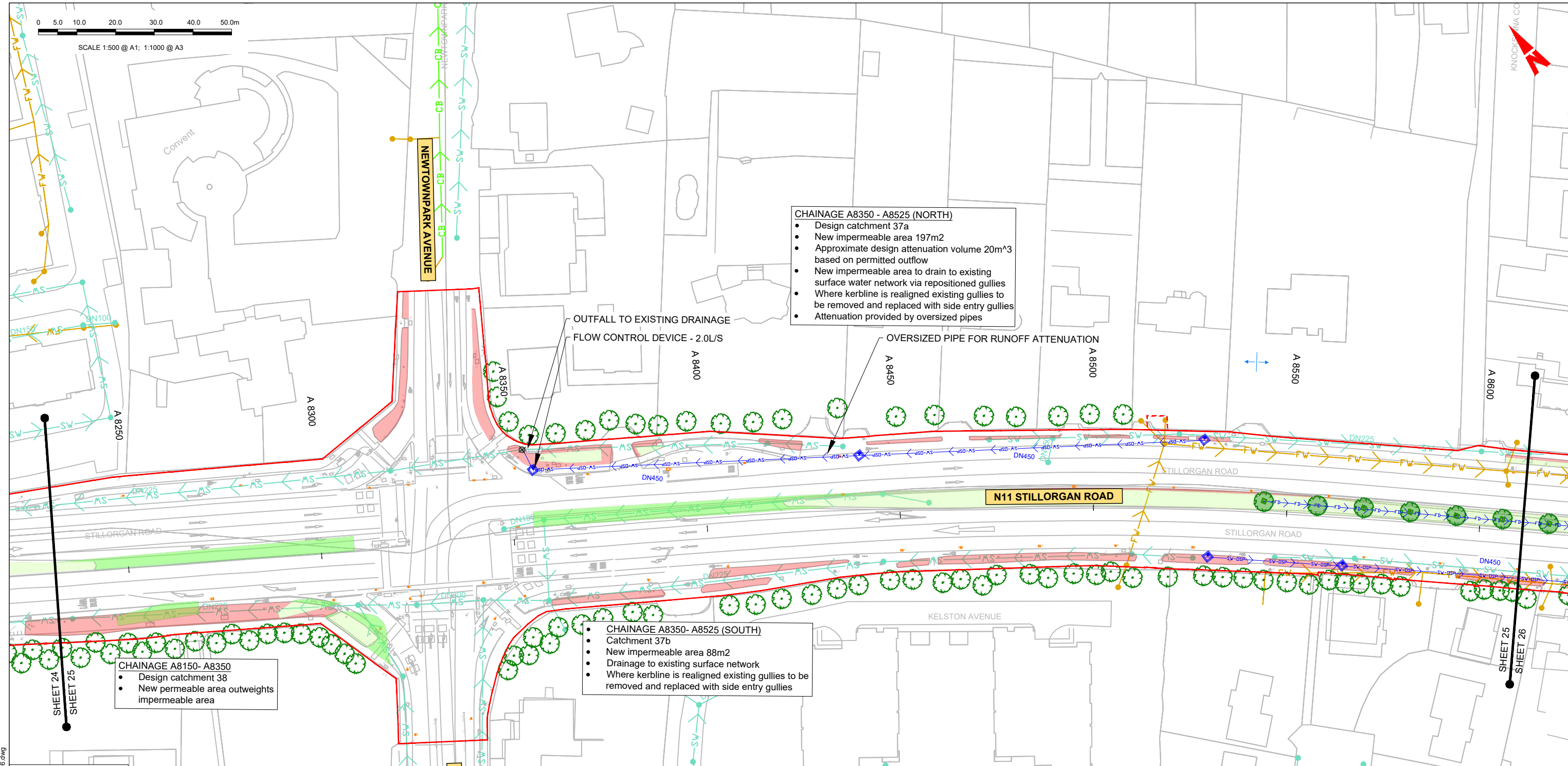
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-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)
	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.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

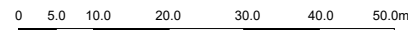
Engineering Designer: **Jacobs**

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		
Drawing Title		CORE BUS CORRIDORS INFRASTRUCTURE WORKS		
Drawing File Name		Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0025		25 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

- 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

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.

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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-0026	Sheet Number	26 of 54
Status	A	Rev	M01

- NOTES:**
1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.
- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

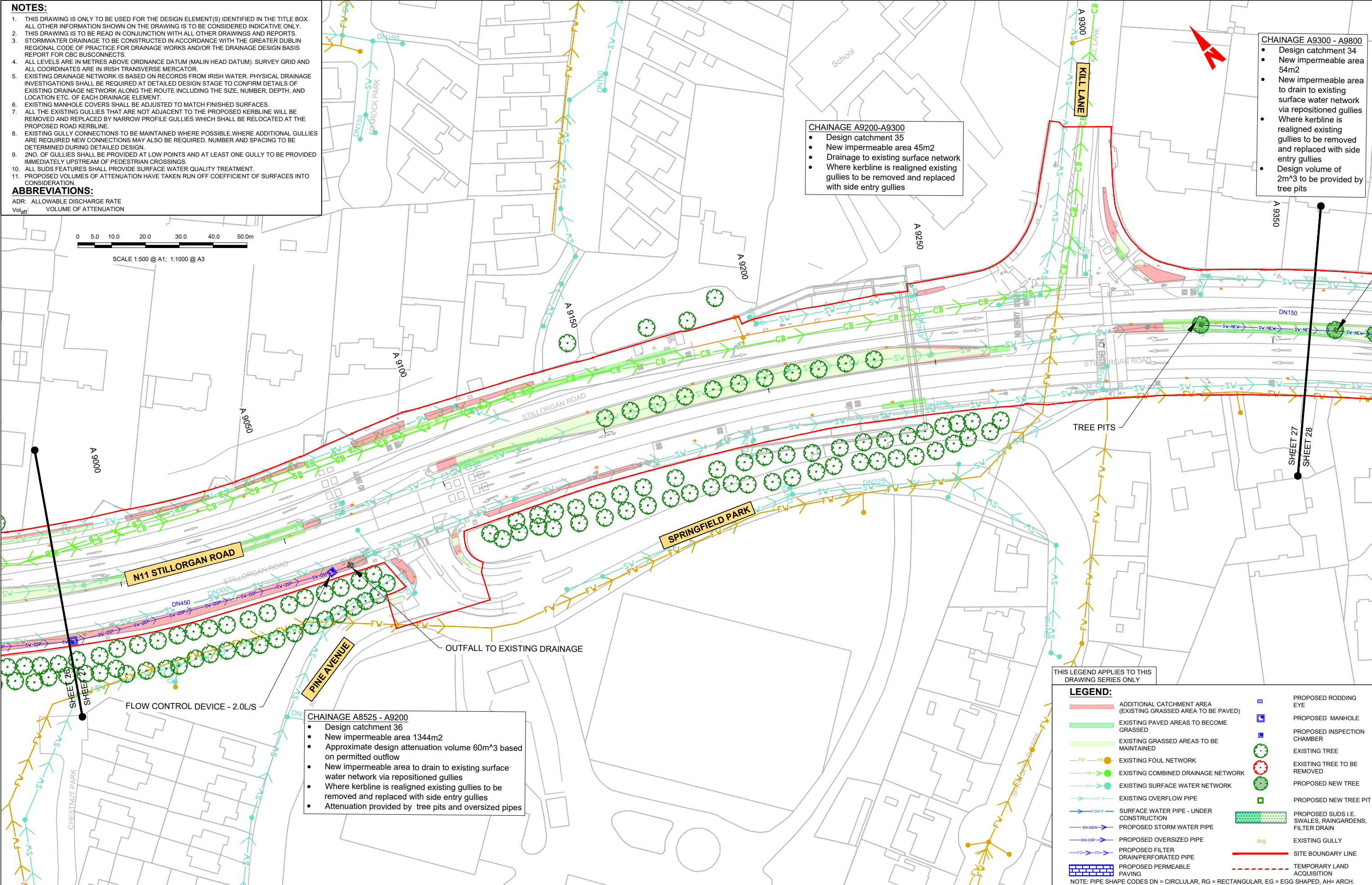
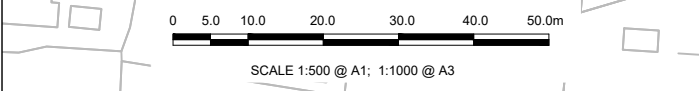
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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



CHAINAGE A9200-A9300

- Design catchment 35
- New impermeable area 45m²
- Drainage to existing surface water 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		

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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: 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-0027	27 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

0 5.0 10.0 20.0 30.0 40.0 50.0m

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

CHAINAGE A9300 - A9800

- Design catchment 34
- New impermeable area 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
	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:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

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

Engineering Designer: **Jacobs**

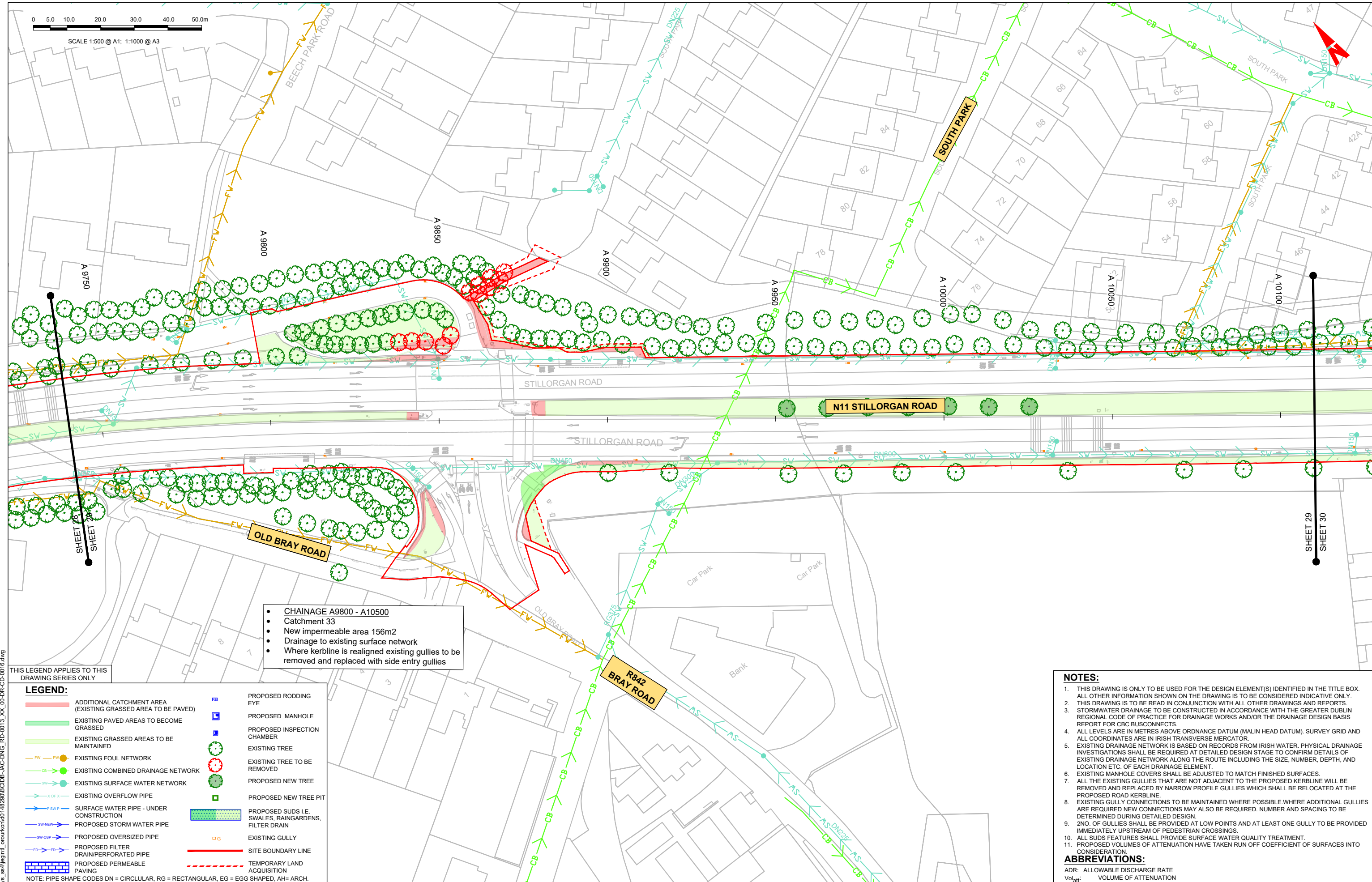
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

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

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0028	28 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

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:

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

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
 VolAtt: VOLUME OF ATTENUATION

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. G.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

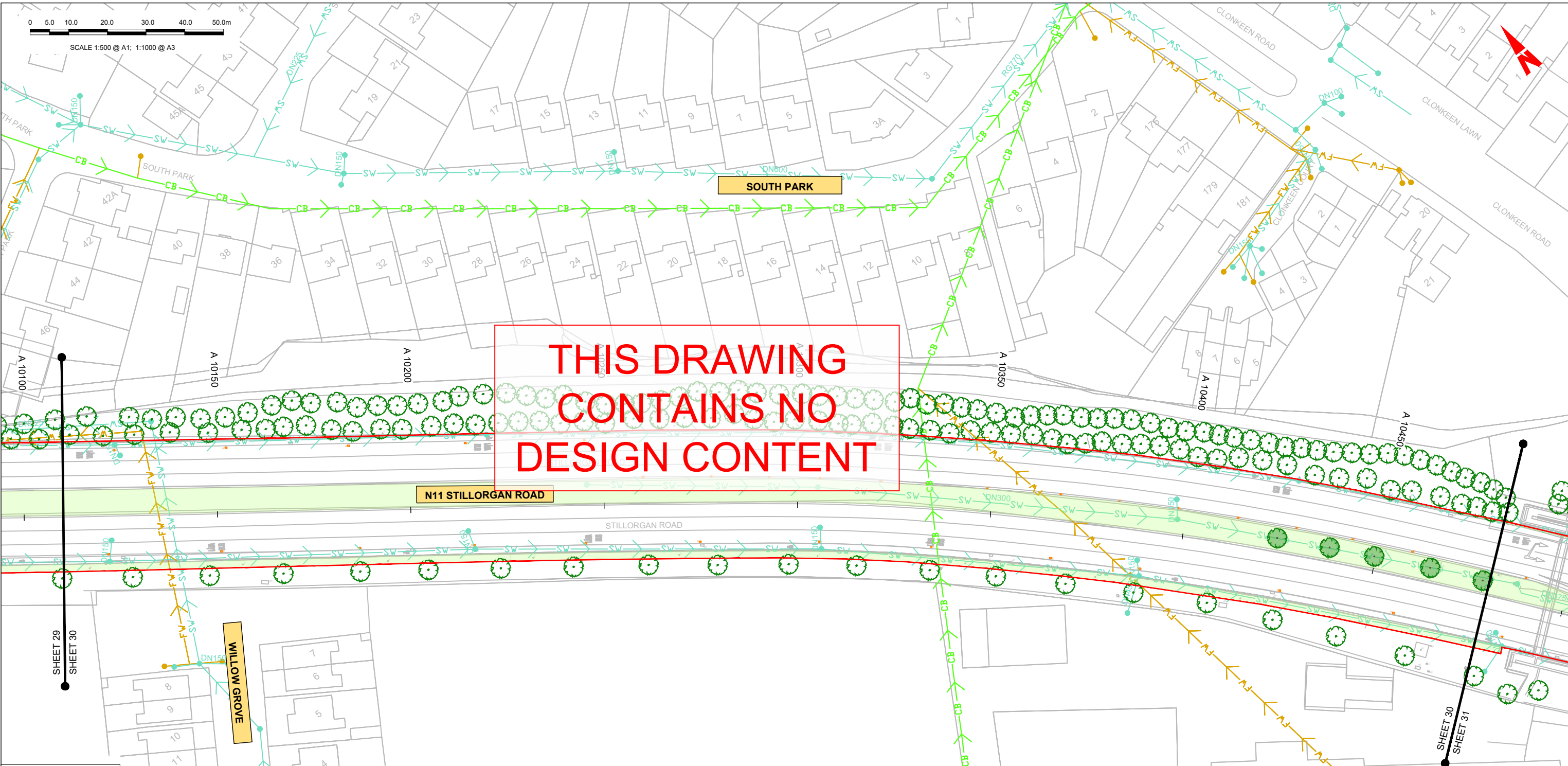
Client: **NTA**
 Údarás Náisiúnta Iompair
 National Transport Authority

Engineering Designer: **Jacobs**

Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	QMS 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-0029	29 of 54	A	M01	

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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.

NOTES:

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

ABBREVIATIONS:

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

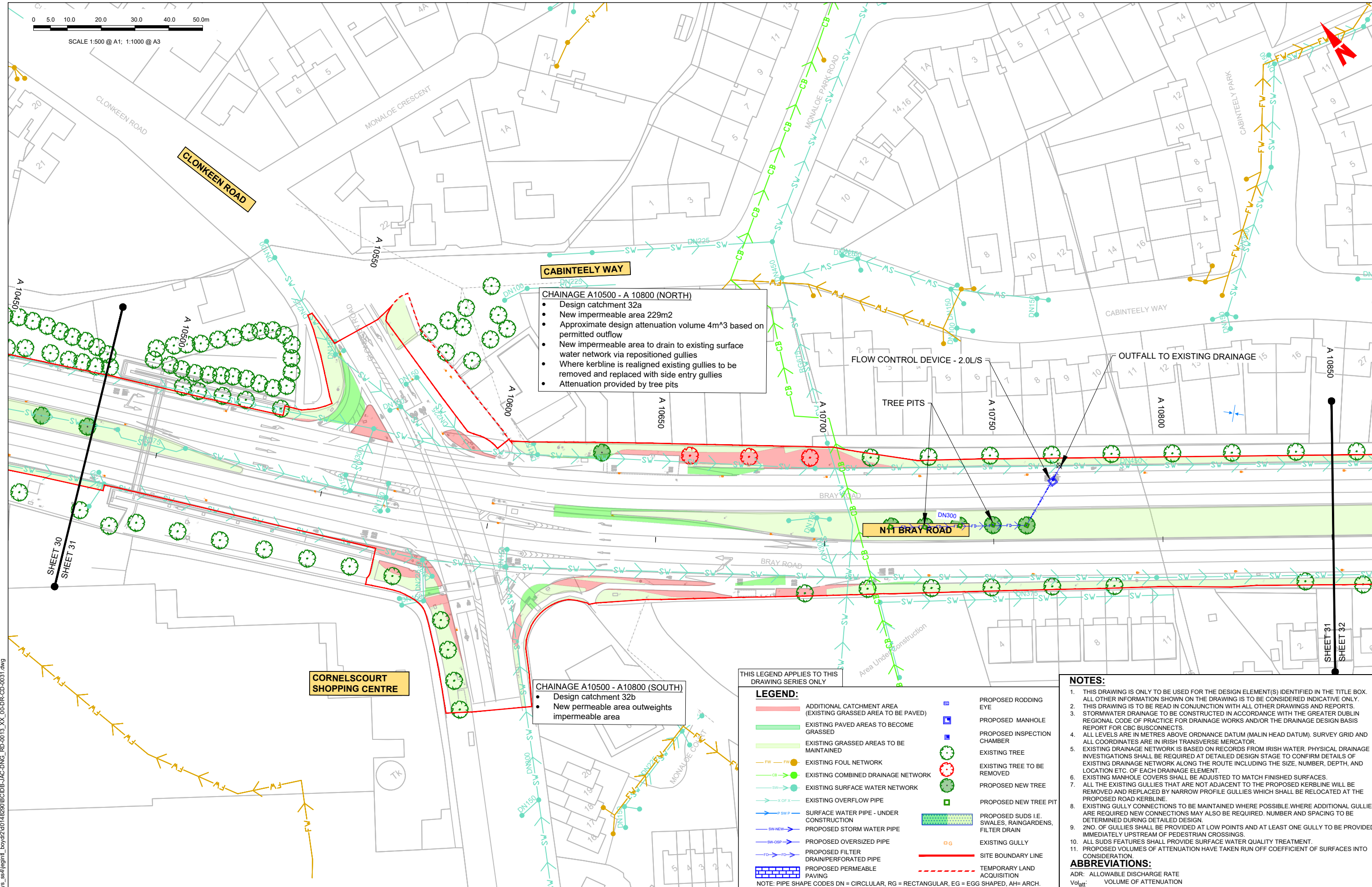
Engineering Designer: **Jacobs**

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

Project Code: BCIDB | Originator Code: JAC | QMS 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-0030	30 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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 kerblines are realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by tree pits

CHAINAGE A10500 - A10800 (SOUTH)

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

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:**
1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL OF THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.
- ABBREVIATIONS:**
- ADR: ALLOWABLE DISCHARGE RATE
VolAtt: VOLUME OF ATTENUATION

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_160 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of the information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

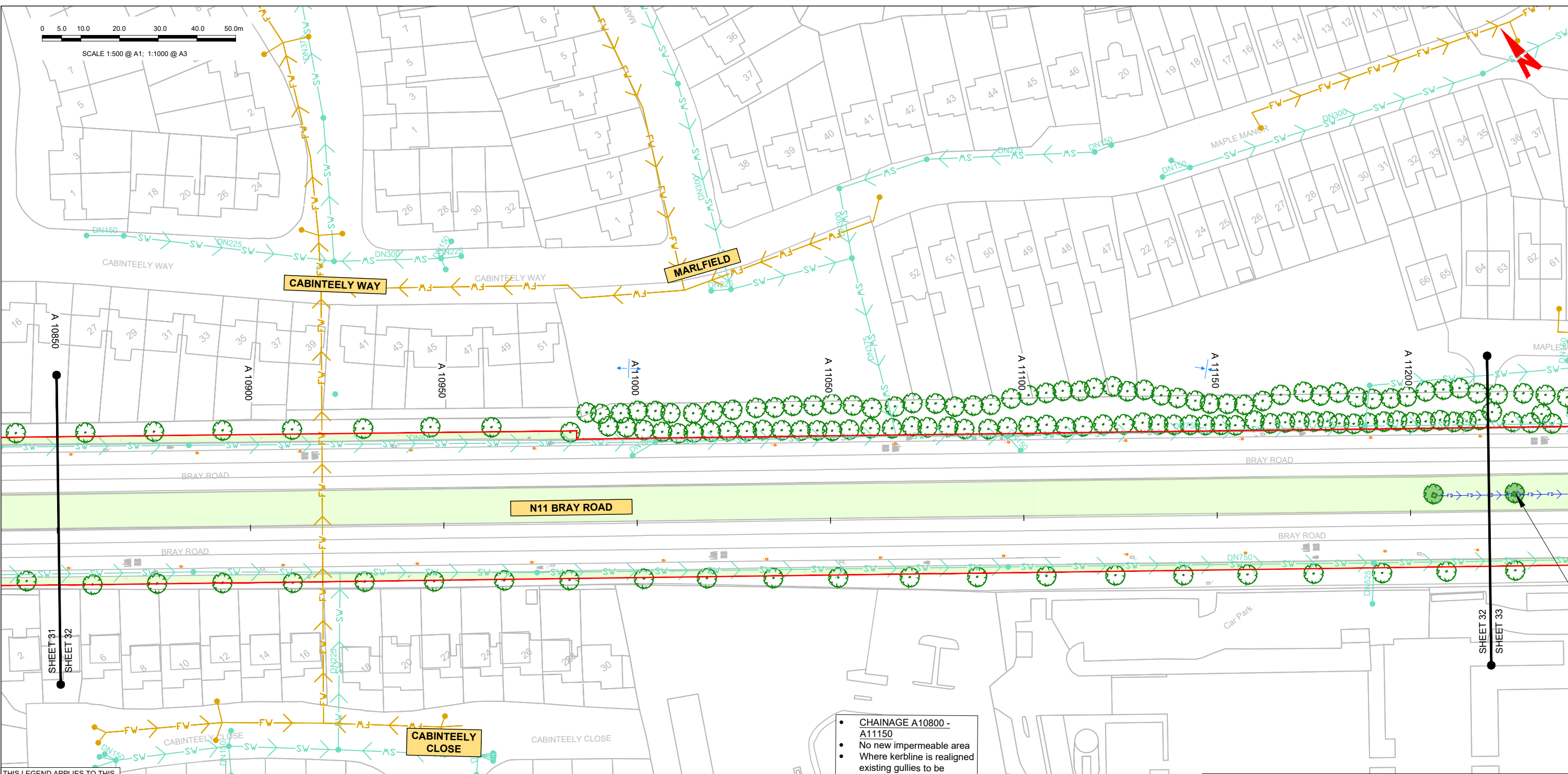
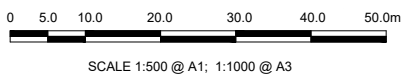
Client: **NTA** (Údarás Náisiúnta Iompair National Transport Authority)

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-0031	31 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 A10800 - A11150
 • No new impermeable area
 • Where kerbline is realigned existing gullies to be removed and replaced with side entry gullies

NOTES:

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

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

C:\pwworking\jacobs_uk_highways_asd\legint_bay2d\142820\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0031.dwg

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OS/NMA_160 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

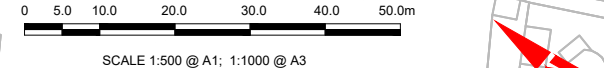
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

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

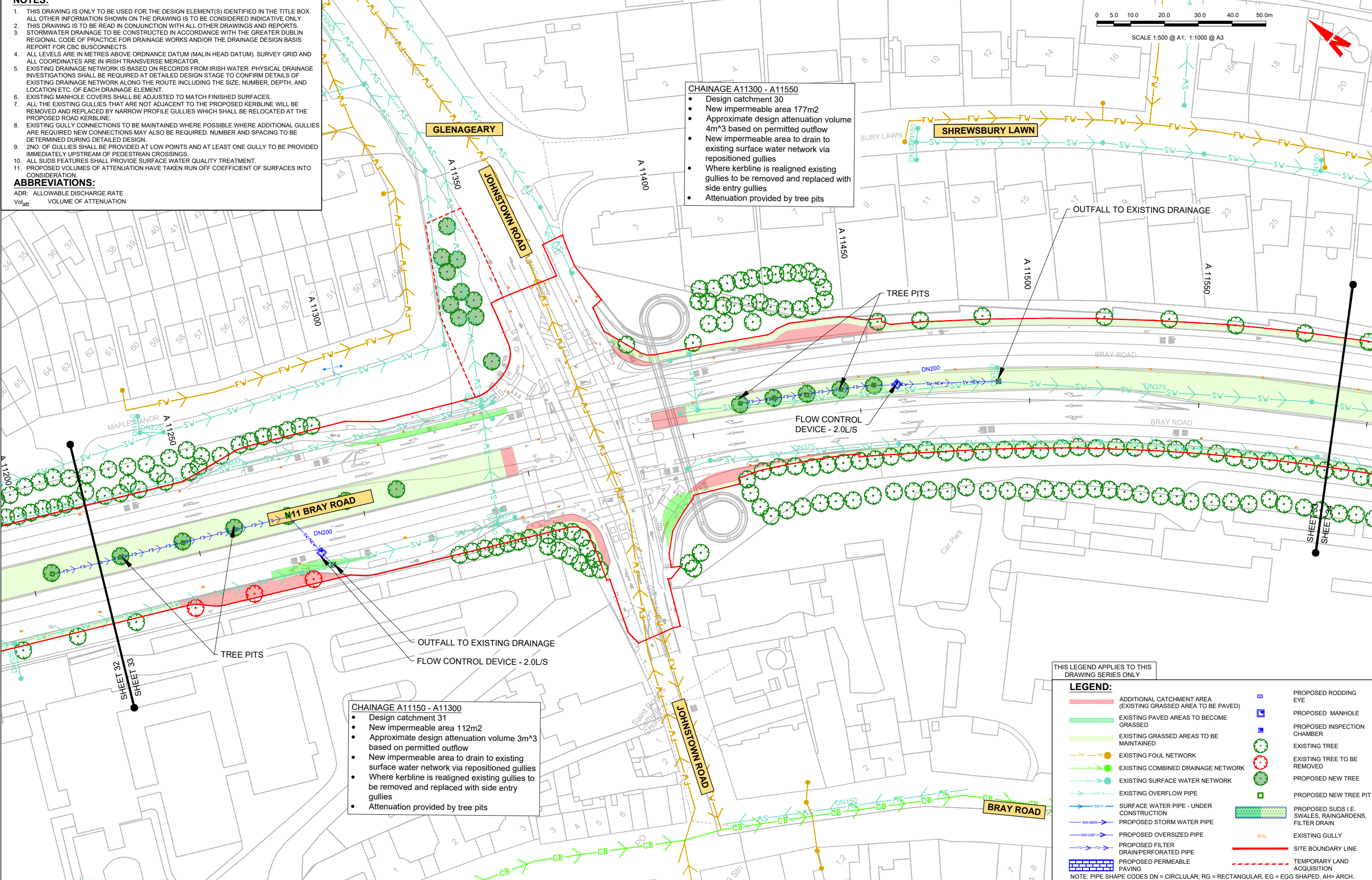


CHAINAGE A11300 - A11550

- 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		

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

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

Engineering Designer: **Jacobs**

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

Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0033	Sheet Number: 33 of 54	Status: A	Rev: M01

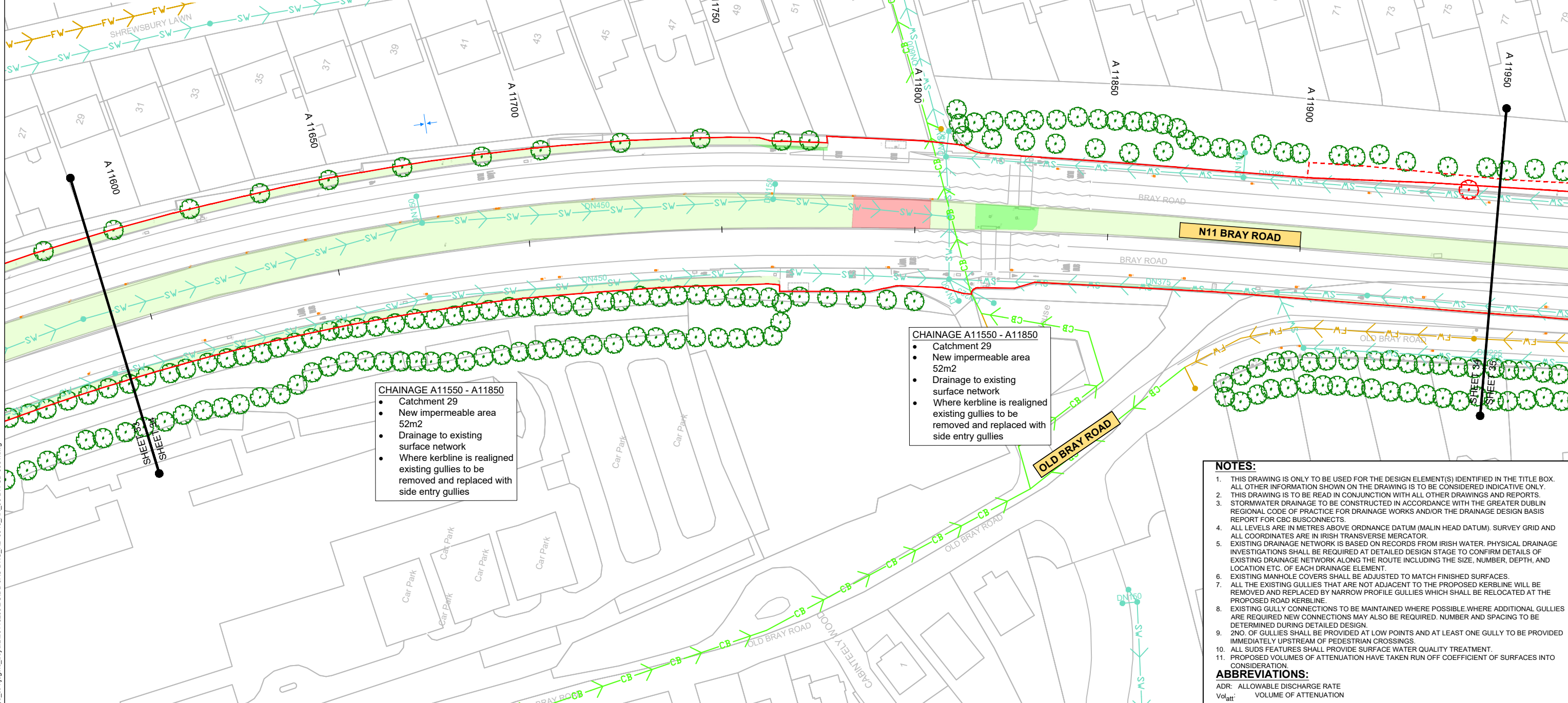
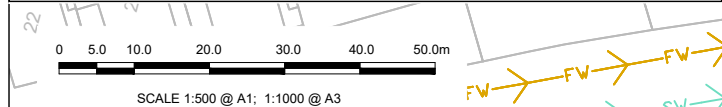
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		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 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

- NOTES:**
- THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 - STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 - ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 - EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 - EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 - ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 - EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 - 2ND. 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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 160 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information, or any part of it. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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**

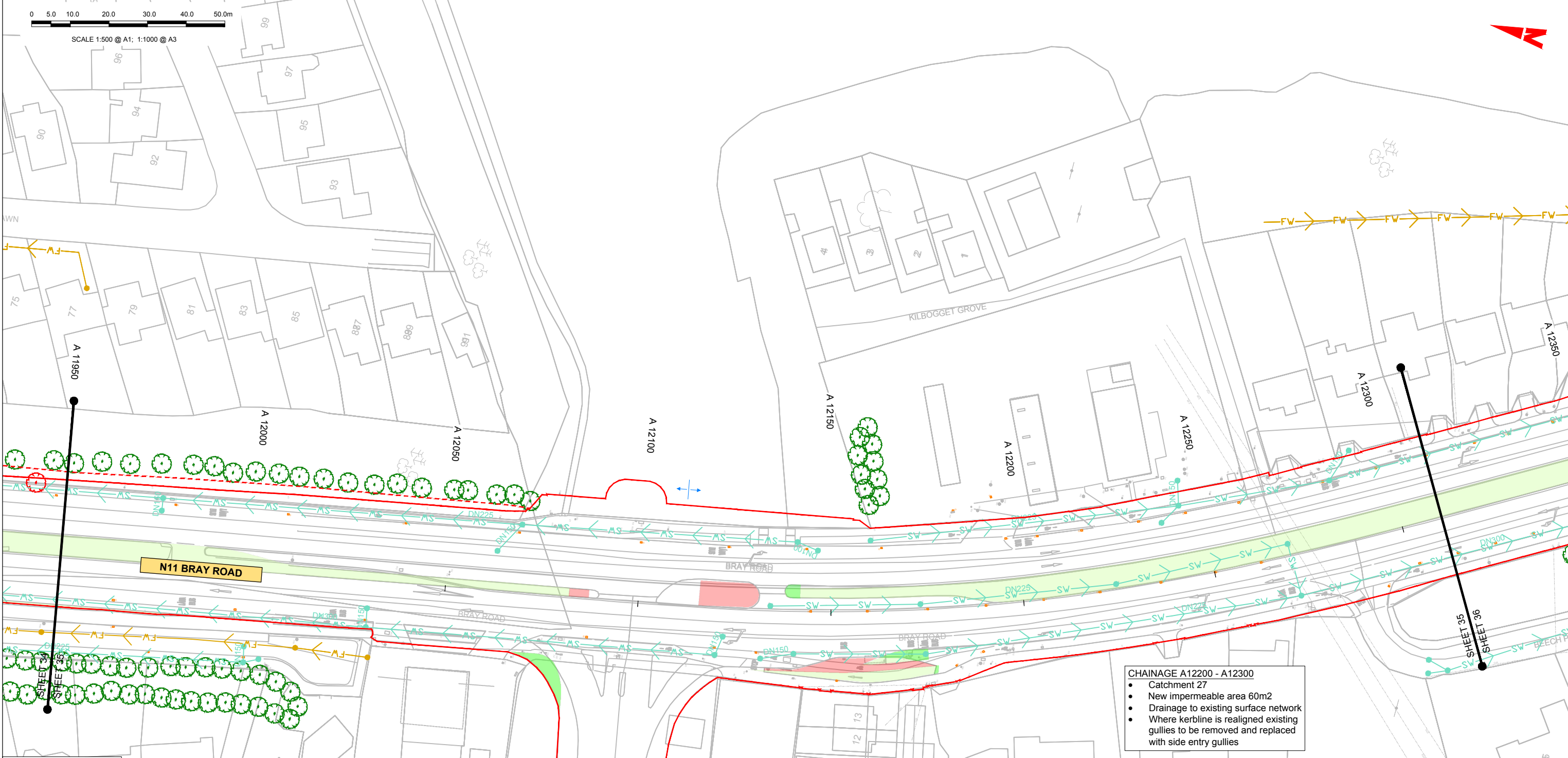
Date: 08/05/2023
Scale: 1:500 @ A1
1:1000 @ A3

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

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

Disclaimer:
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-O.S./NMA_190 National Transport Authority. All elevations are in metres and relate to O.S. Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by O.S. active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.
 e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

- NOTES:**
1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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



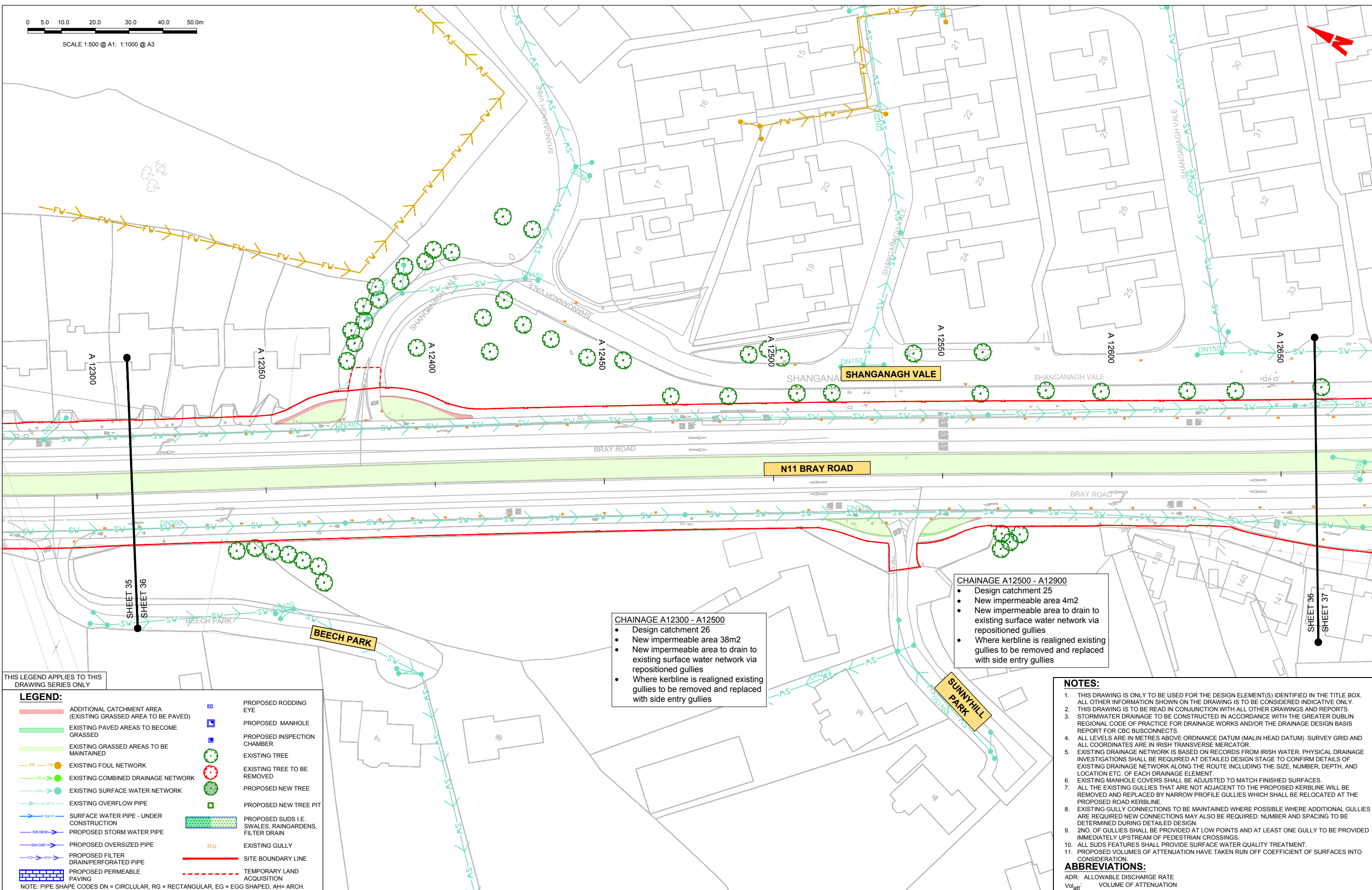
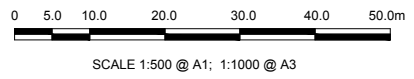
Rev	Date	Drn	Chkd	App'd	Description
M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING

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	

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_ssa\legimf_cronkton\0146290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0035.dwg



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

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.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-OIS_NMA_190 National Transport Authority. All elevations are in metres and relate to OSG Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSG active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

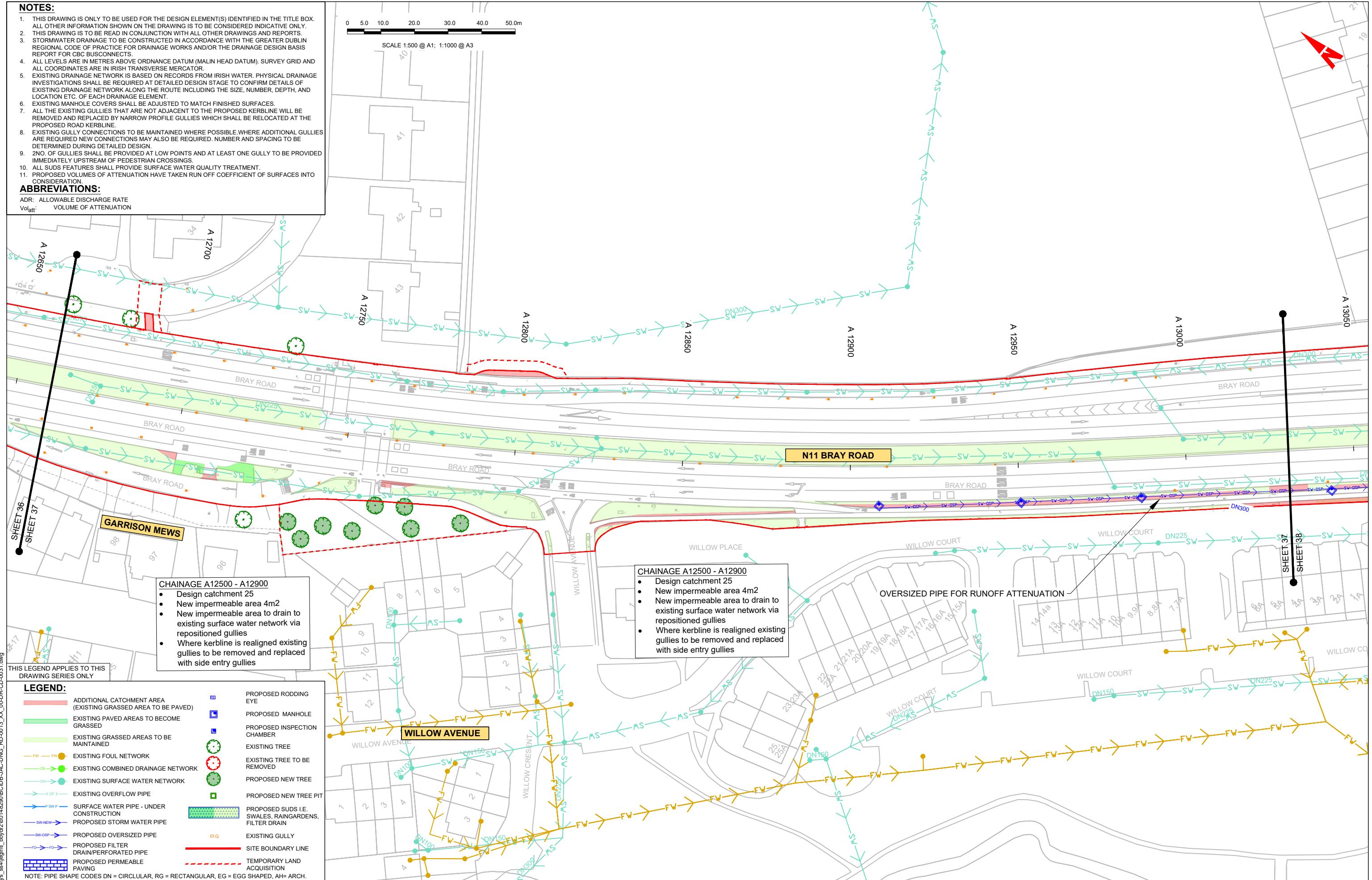
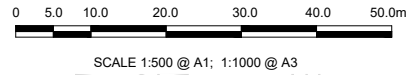
Project Code: BCIDB | Originator Code: JAC | QMS Code:

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

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

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



- 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

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.

C:\pwworking\jacobs_uk_highways_asd\legintl_bayard\2d\142820\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0031.dwg

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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	QMS Code		
BCIDB	JAC			

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

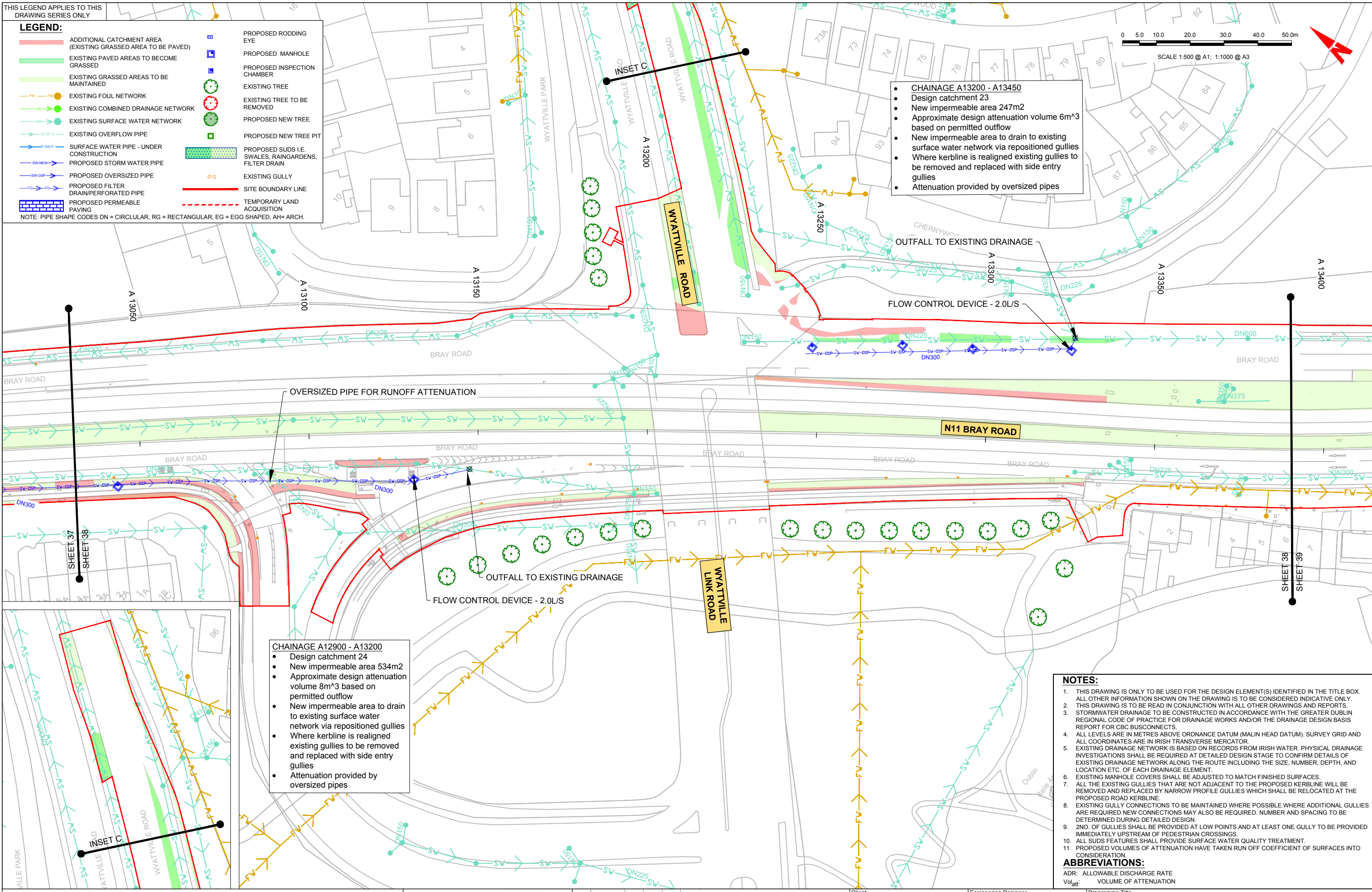
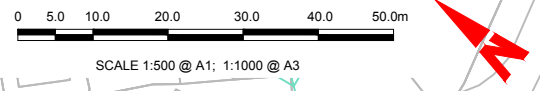
Drawing Title: **BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME**
PROPOSED SURFACE WATER DRAINAGE WORKS

Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0037	37 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 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 kerbline is 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 kerbline is realigned existing gullies to be removed and replaced with side entry gullies
- Attenuation provided by oversized pipes

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

C:\pwworking\jacobs_uk_highways_ssd\legimf_courant\0d0146290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001.dwg

Disclaimer: © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-OIS-NMA_190 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

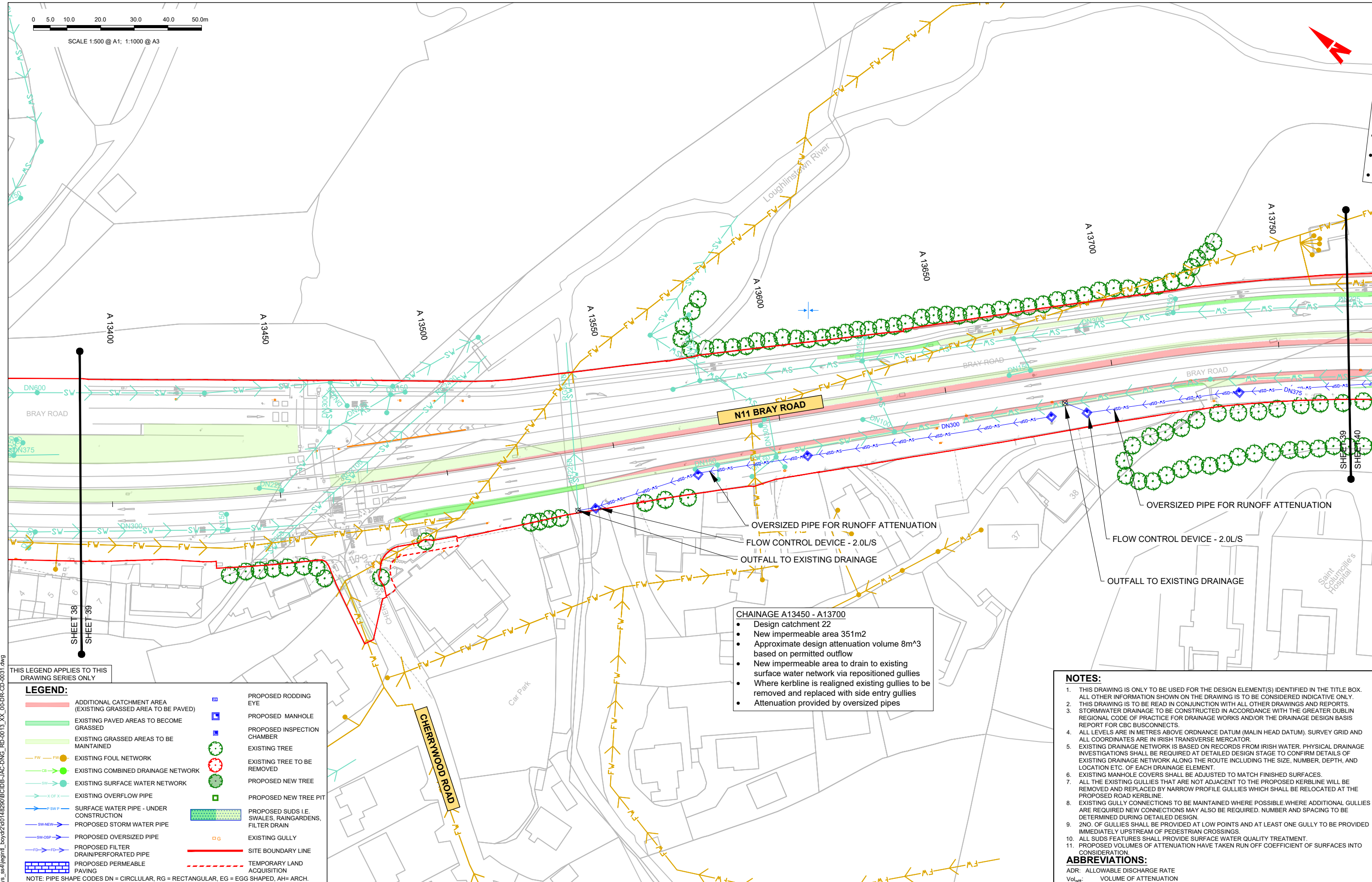
Engineering Designer: **Jacobs**

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

Project Code: BCIDB | Originator Code: JAC | 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-0038	Sheet Number: 38 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)		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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Project Ireland 2040
Building Ireland's Future

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

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

Engineering Designer: **Jacobs**

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

Project Code: BCIDB
Originator Code: JAC

QMS Code: OMS

Drawn: BD
Checked: NS
Approved: RS

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

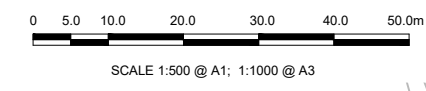
ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

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

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



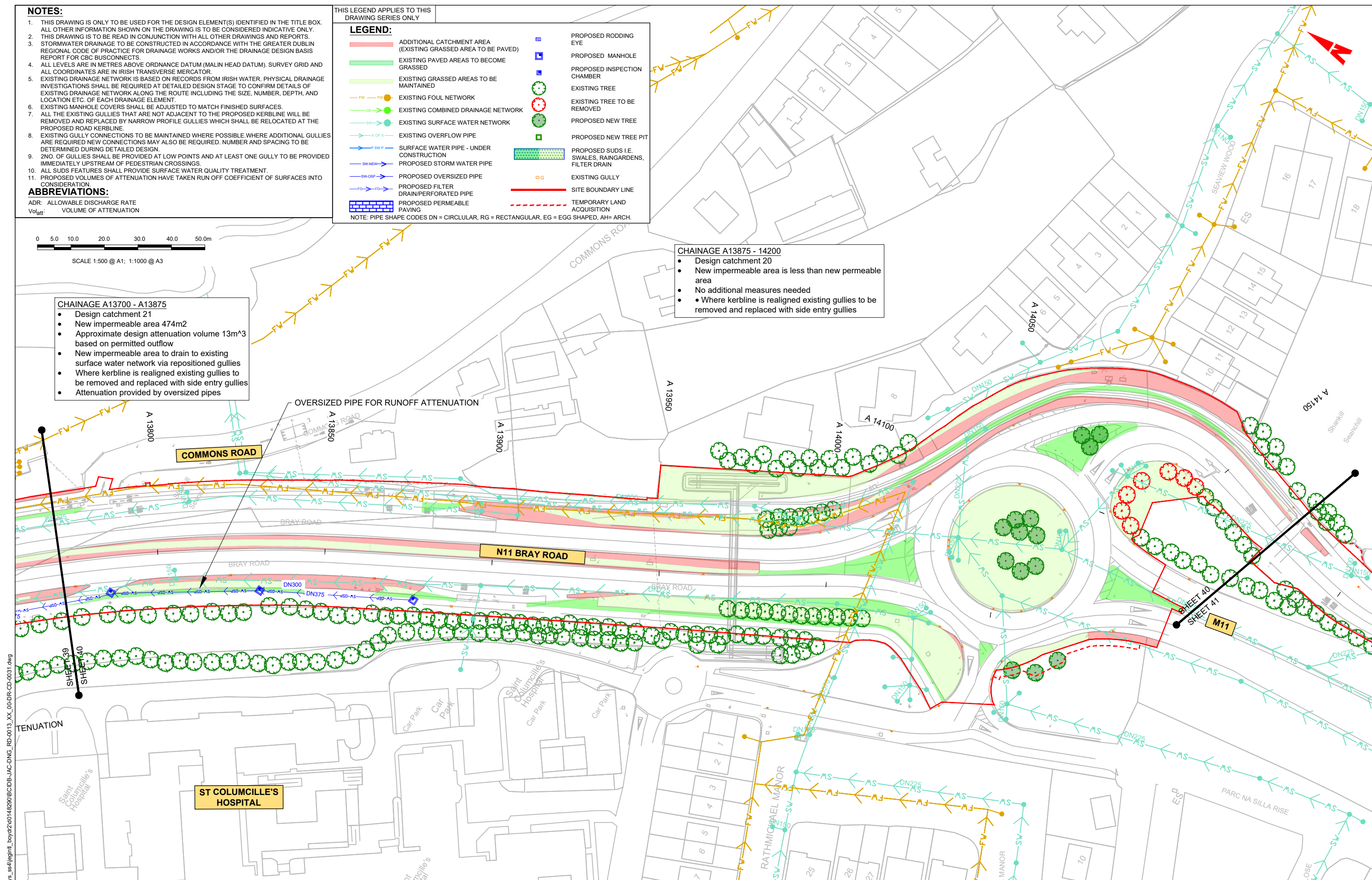
CHAINAGE A13700 - A13875

- 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



C:\pwworking\jacobs_uk_highways_asd\legintl_bovrd\2d\142820\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0040.dwg

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0040	40 of 54	A	M01

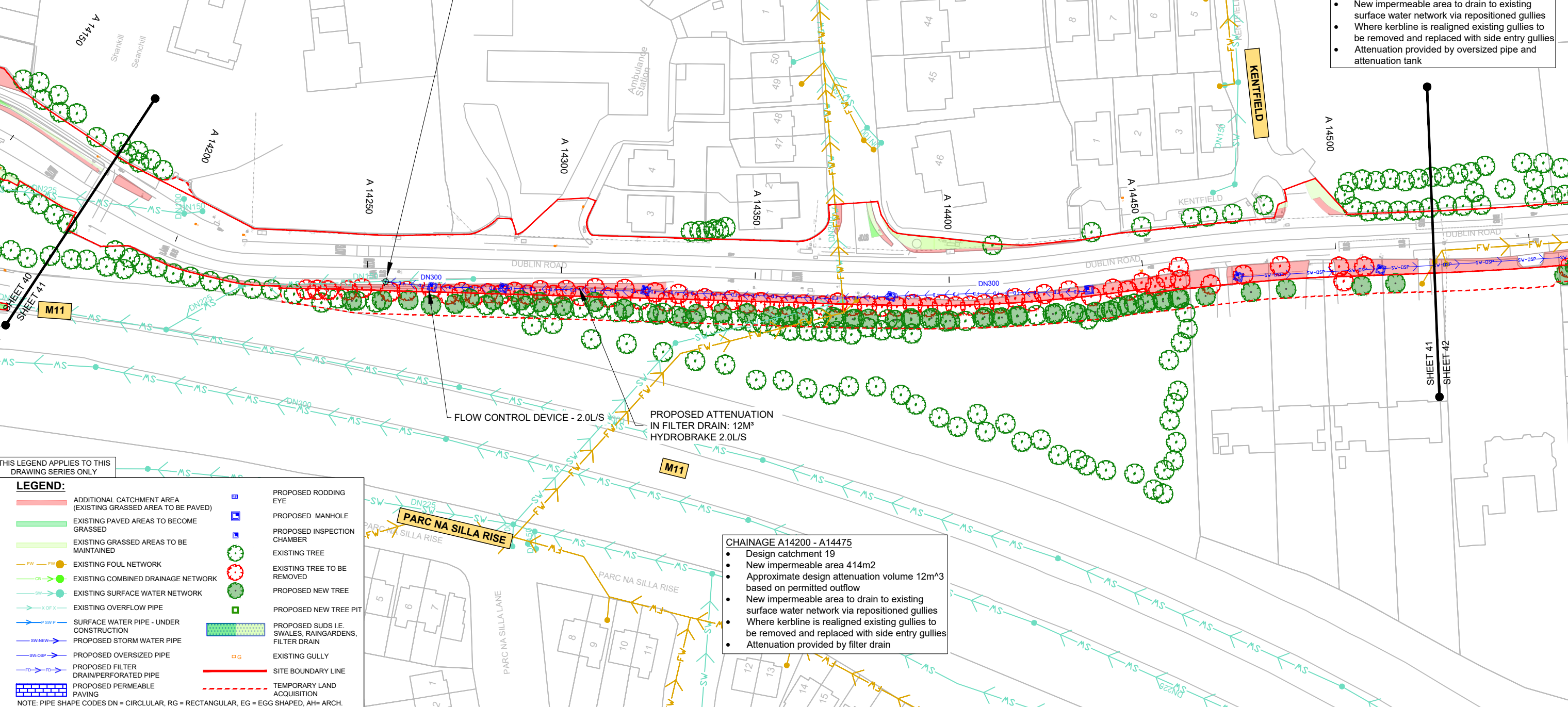
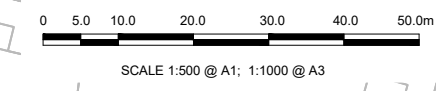
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

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



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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

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

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

CHAINAGE A14200 - A14475

- Design catchment 19
- New impermeable area 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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI/NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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: 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-0041	41 of 54	A	M01

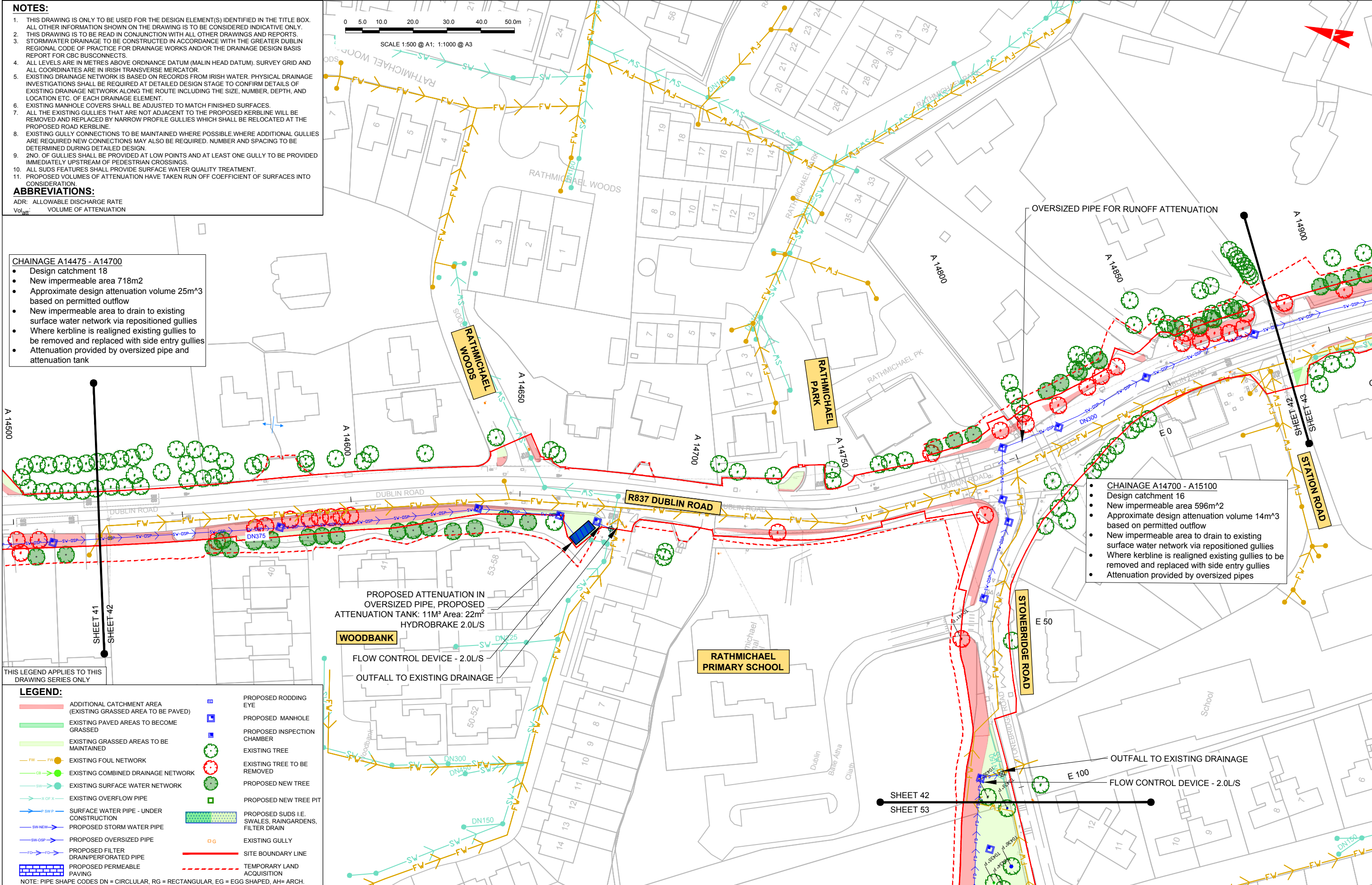
DO NOT SCALE USE FIGURED DIMENSIONS ONLY

- NOTES:**
1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM), SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

- 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

- 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 kerbline is realigned existing gullies to be removed and replaced with side entry gullies
 - Attenuation provided by oversized pipes



LEGEND:

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

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-OS_NMA_190 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OS active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

C:\pwworking\jacobs_uk_highways_ssf\legintf_courant\font\0146220\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0001.dwg



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		Engineering Designer 		
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-0042	42 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)		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		

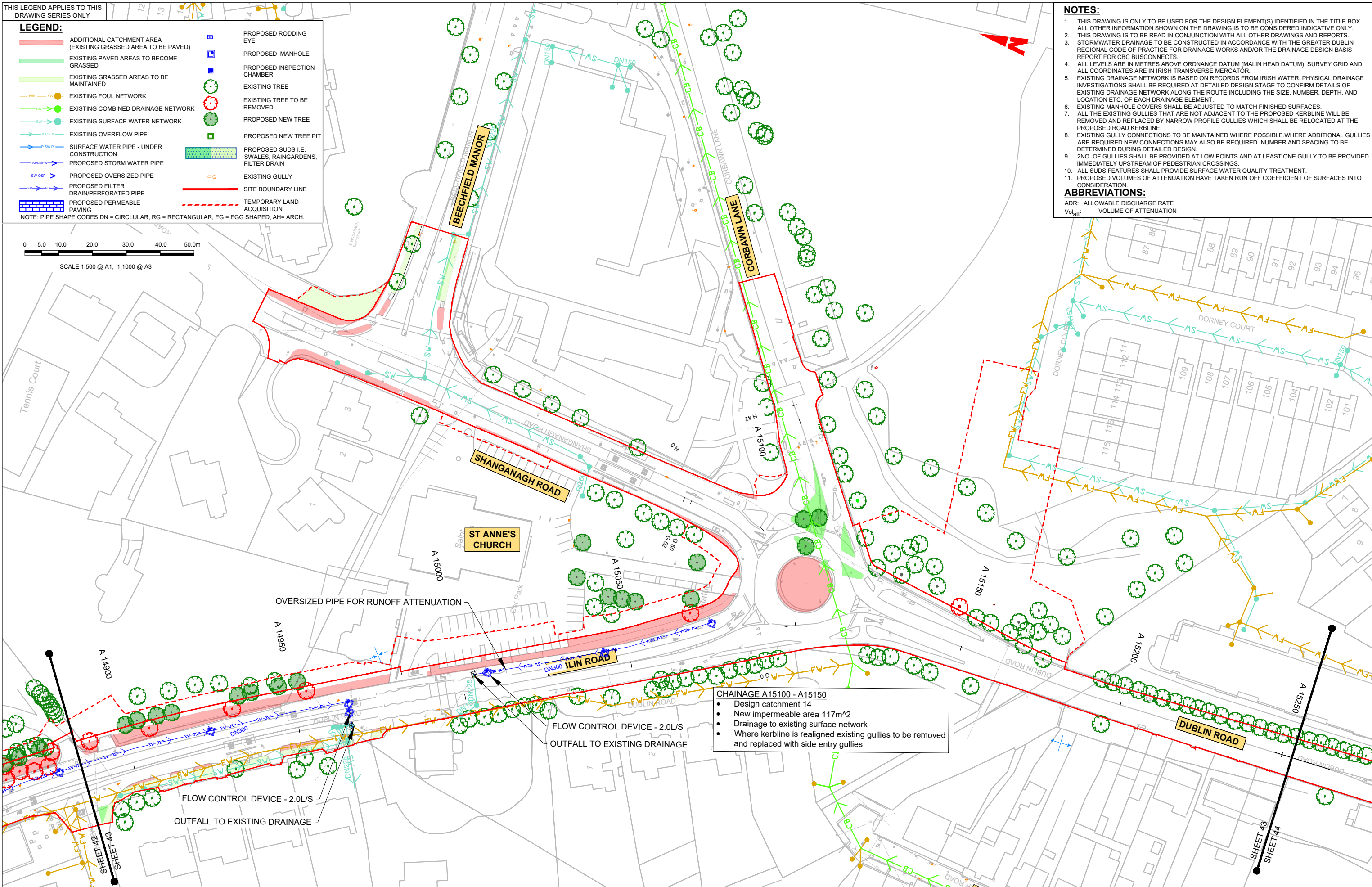
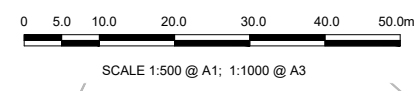
NOTE: PIPE SHAPE CODES DN = CIRCLULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

NOTES:

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

ABBREVIATIONS:

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



C:\pwworking\jacobs_uk_highways_ssf\legint_courukon\0146290\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0031.dwg

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022-O.S. NMA_190 National Transport Authority. All elevations are in metres and relate to O.S. Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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**

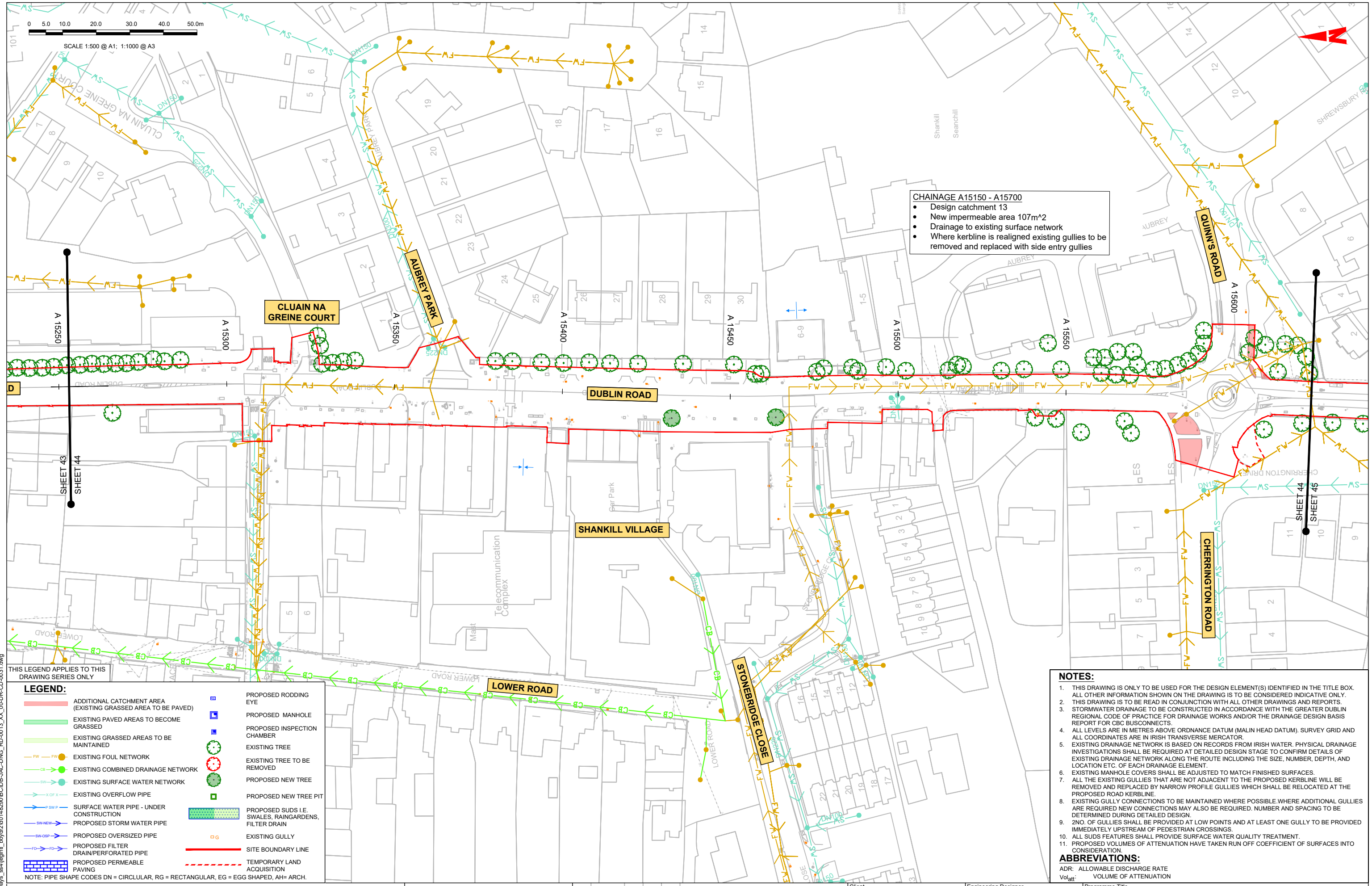
Date: 08/05/2023
Scale: 1:500 @ A1
1:1000 @ A3

Project Code: BCIDB
Originator Code: JAC

Drawn: BD
Checked: NS
Approved: RS

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	

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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		

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

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

ADR: ALLOWABLE DISCHARGE RATE
Volatt: VOLUME OF ATTENUATION

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Project Ireland 2040
Building Ireland's Future

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

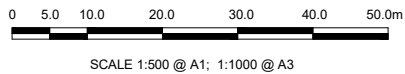
Client: **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

Engineering Designer: **Jacobs**

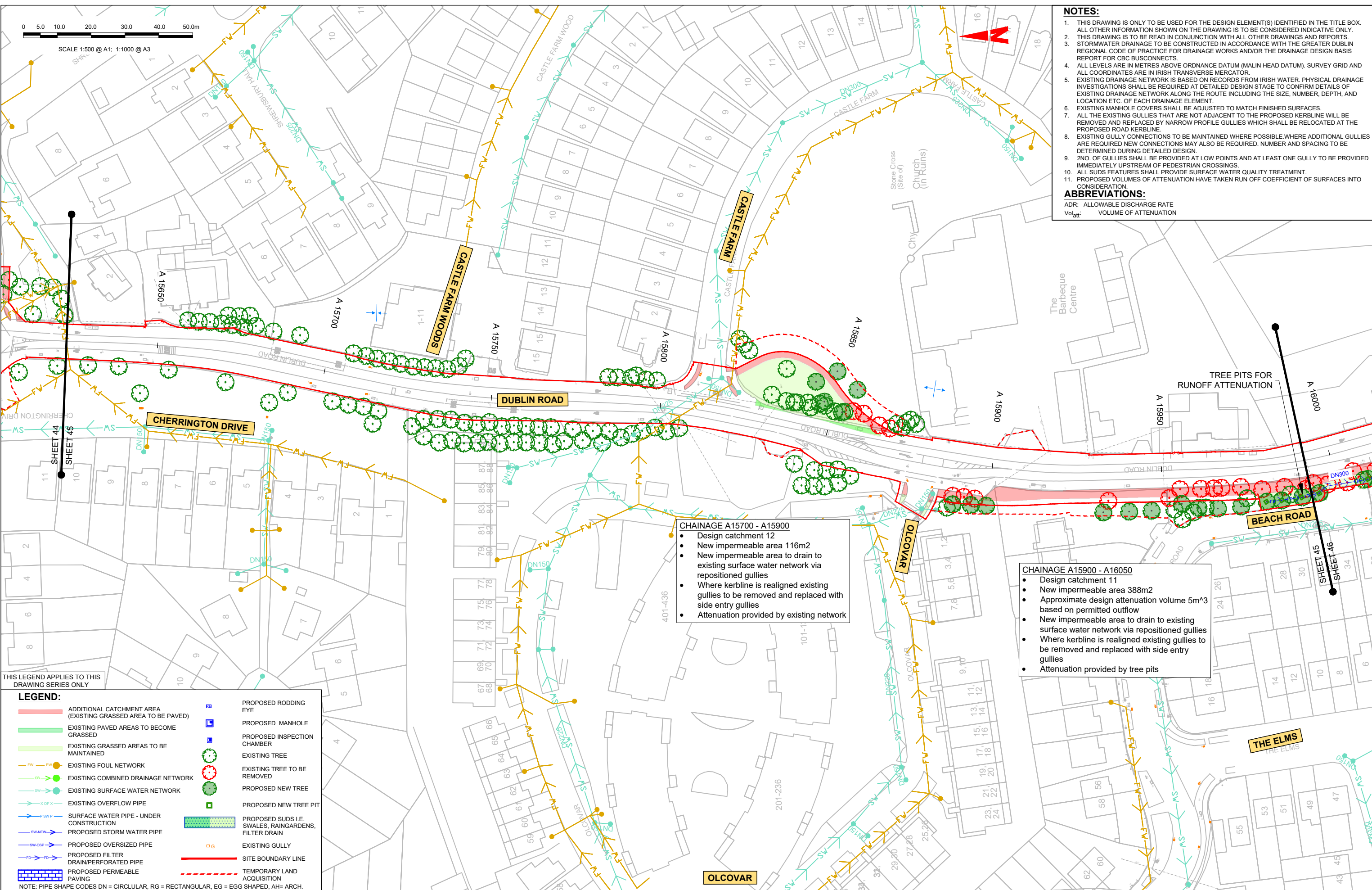
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. G.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

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

Client: **NTA**
Órdár 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-0045	Sheet Number 45 of 54	Status A	Rev M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

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.

Disclaimer
 a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.
 b. This drawing is to be used for the design element identified in the title box. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
 c. G.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.
 d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

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

Programme Title		Drawing Title	
BUSCONNECTS DUBLIN 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

- NOTES:**
1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
 3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
 4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
 5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
 6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
 7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
 8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
 9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
 10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
 11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.
- ABBREVIATIONS:**
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{att}: VOLUME OF ATTENUATION

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

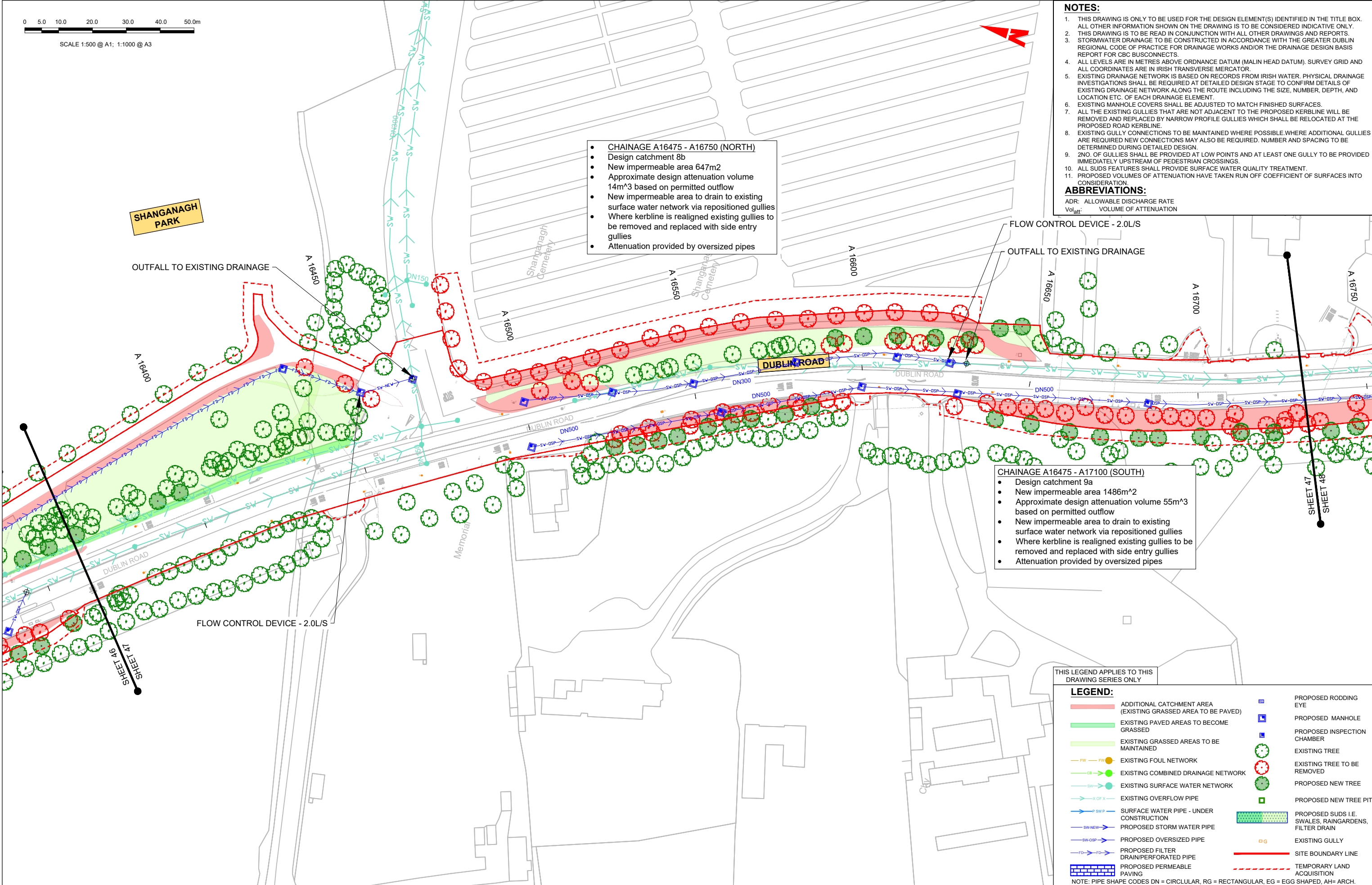


SCALE 1:500 @ A1; 1:1000 @ A3

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



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.

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/O.S./NMA_190 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

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

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

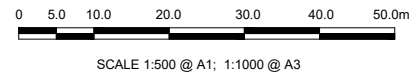
Drawing File Name	Sheet Number	Status	Rev
BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0047	47 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{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.

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI/NMA_180 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as appropriate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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

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

Engineering Designer: **Jacobs**

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

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:

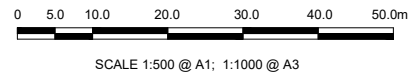
ADR: ALLOWABLE DISCHARGE RATE
Vol_{att}: VOLUME OF ATTENUATION

THIS LEGEND APPLIES TO THIS DRAWING SERIES ONLY

LEGEND:

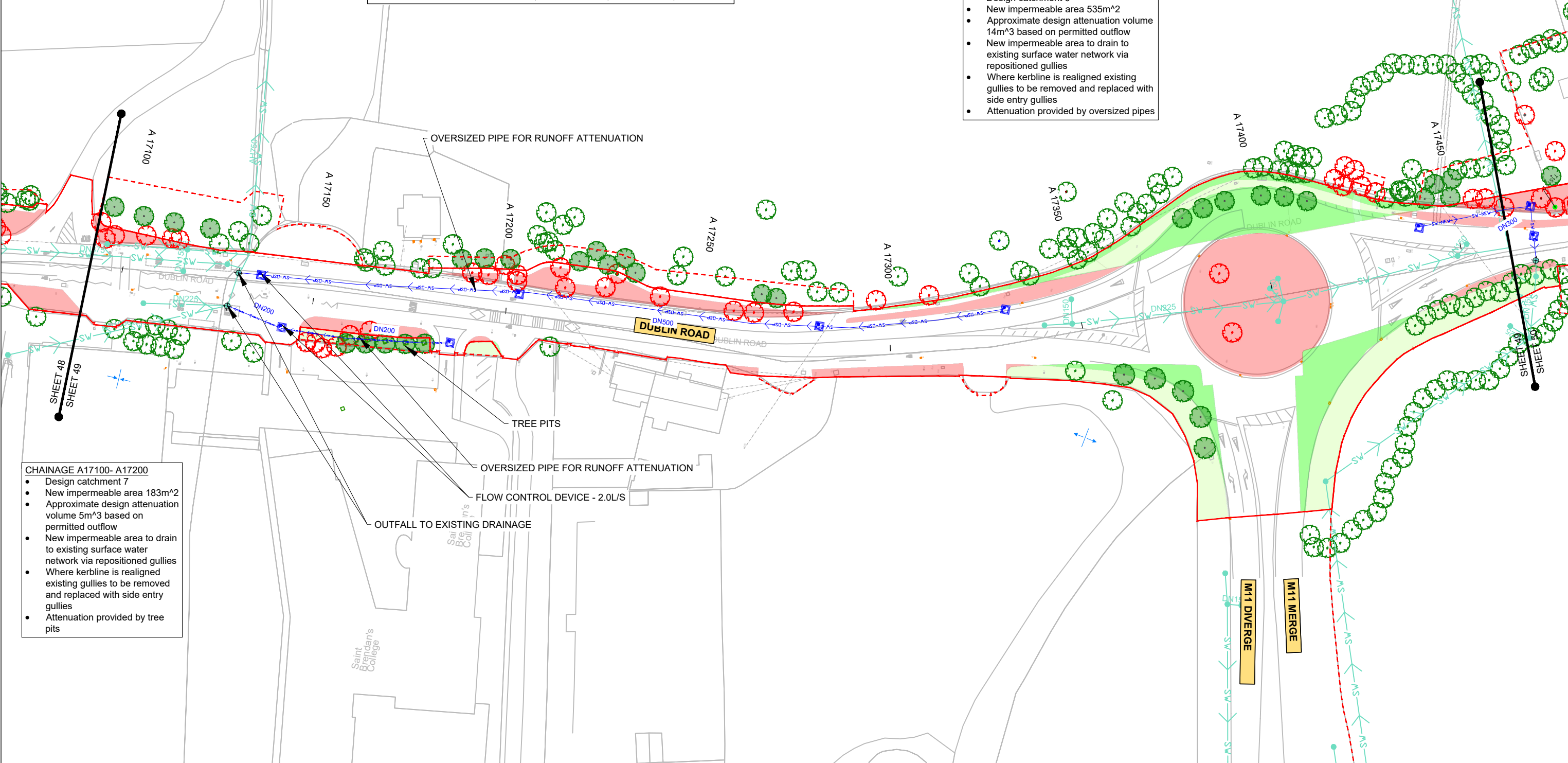
	ADDITIONAL CATCHMENT AREA (EXISTING GRASSED AREA TO BE PAVED)		PROPOSED RODDING EYE
	EXISTING PAVED AREAS TO BECOME GRASSED		PROPOSED MANHOLE
	EXISTING GRASSED AREAS TO BE MAINTAINED		PROPOSED INSPECTION CHAMBER
	EXISTING FOUL NETWORK		EXISTING TREE
	EXISTING COMBINED DRAINAGE NETWORK		EXISTING TREE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

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



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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part for use for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this information. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

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

Engineering Designer: **Jacobs**

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

Project Code: BCIDB | Originator Code: JAC

QMS Code: [] | Drawn: BD | Checked: NS | Approved: RS

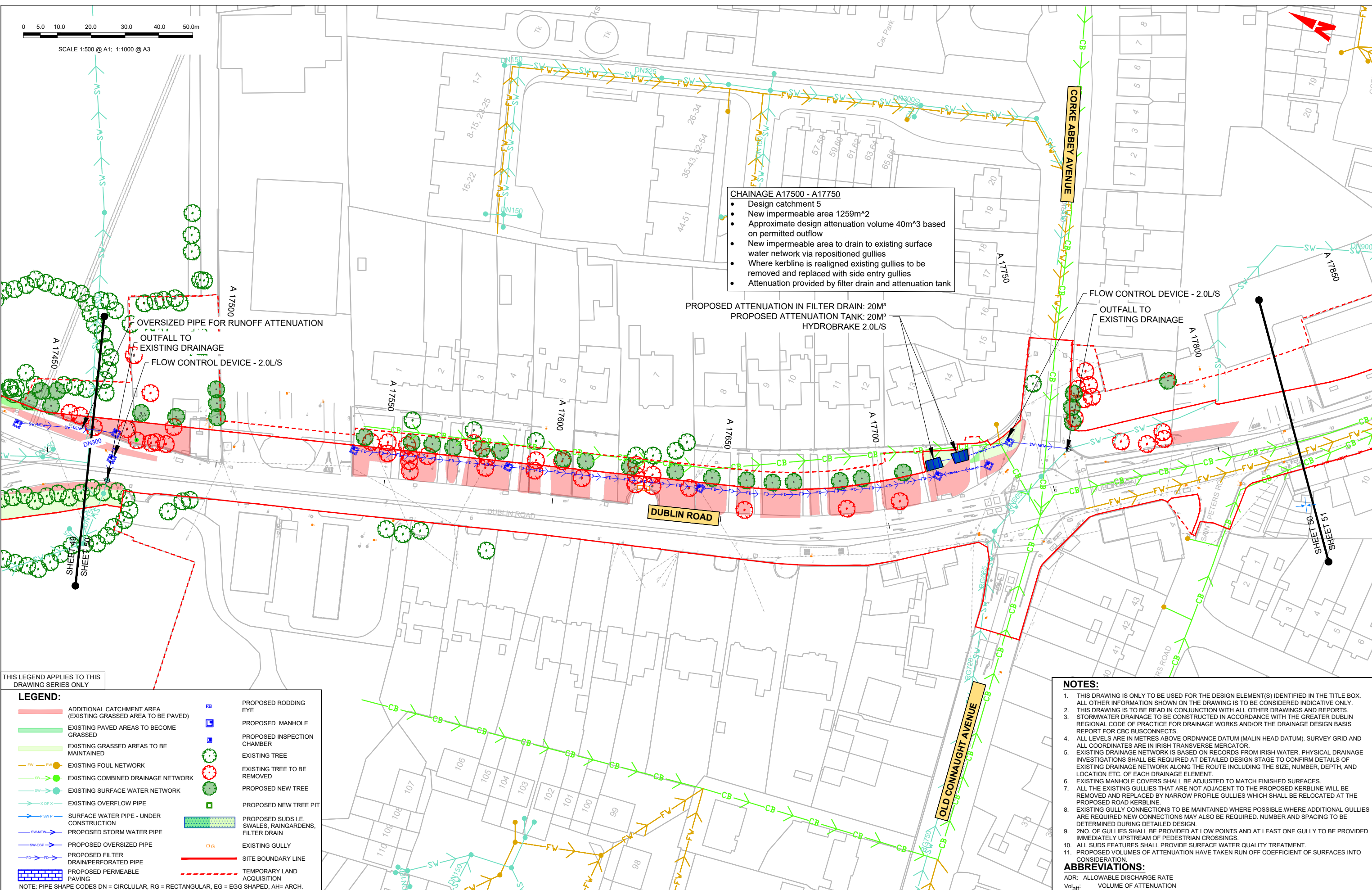
Programme Title: BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0049	Sheet Number: 49 of 54	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

C:\pwworking\jacobs_uk_highways_asd\legintl_bayard\2d\148280\BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0049.dwg



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
	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.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

Disclaimer

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OSG (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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**

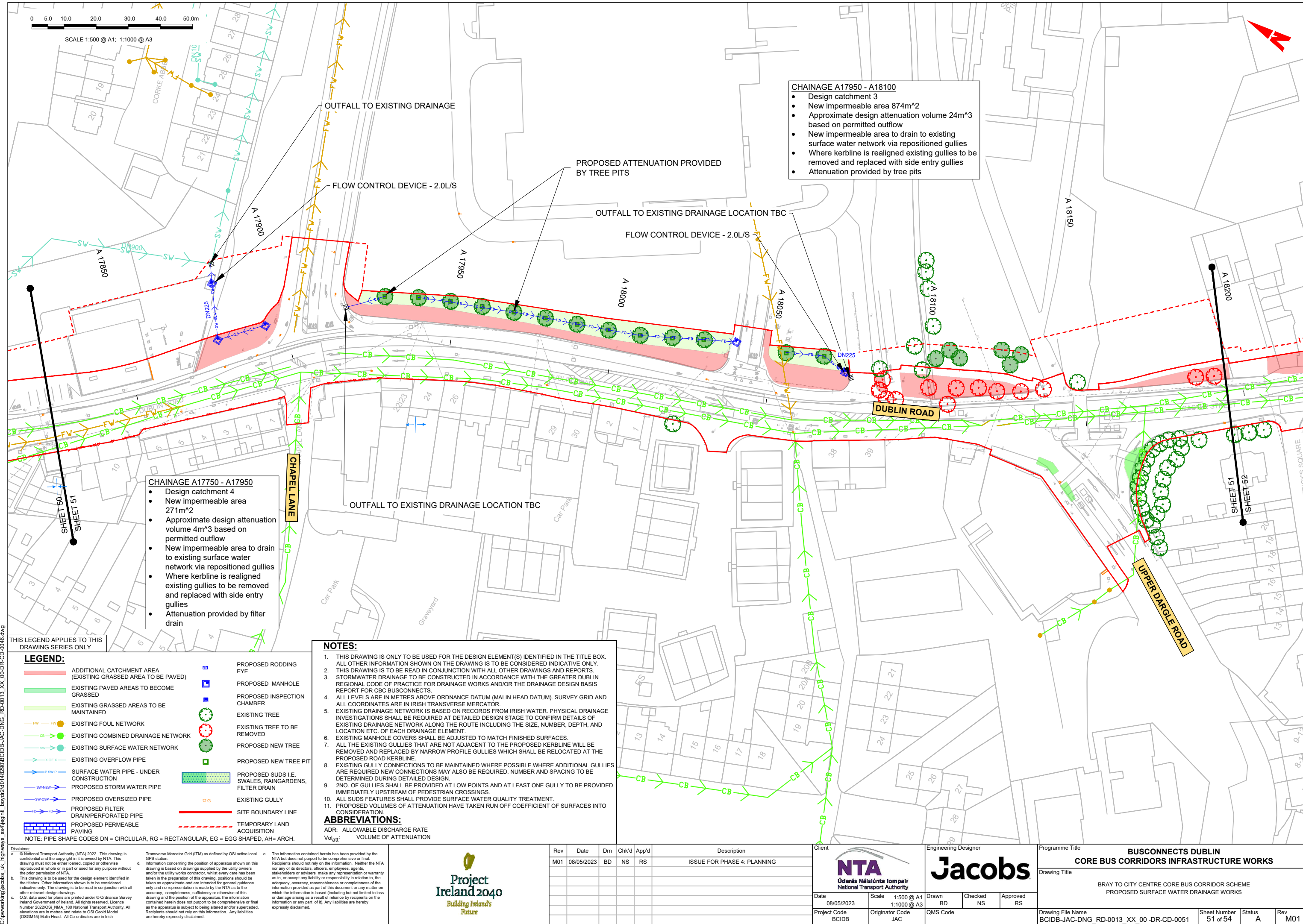
Date	Scale	Drawn	Checked	Approved
08/05/2023	1:500 @ A1 1:1000 @ A3	BD	NS	RS
Project Code	Originator Code	OMS Code		
BCIDB	JAC			

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

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



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

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:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDINANCE DATUM (MALIN HEAD DATUM). SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

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

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OS (Geoid Model) (OSGM15) Mean Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

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

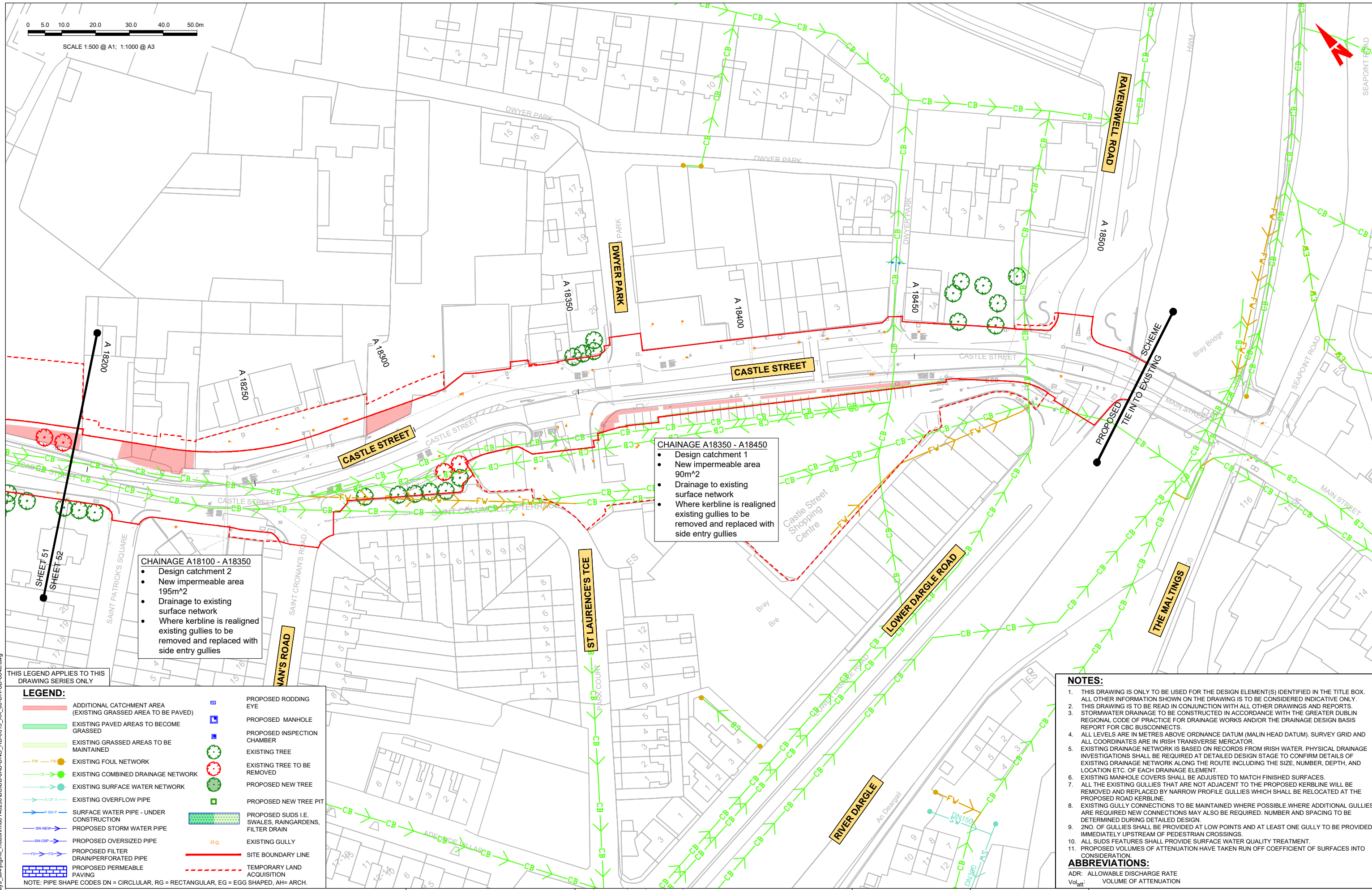
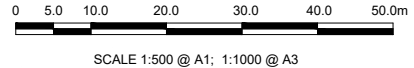
Project Code: BCIDB
 Originator Code: JAC
 OMS Code:

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

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.

NOTES:

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

ABBREVIATIONS:

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

Disclaimer:

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OS_NMA_180 National Transport Authority. All elevations are in metres and relate to OSi Good Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.



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:

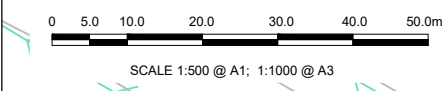
Programme Title: BUSCONNECTS DUBLIN			
CORE BUS CORRIDORS INFRASTRUCTURE WORKS			
Drawing Title: BRAY TO CITY CENTRE CORE BUS CORRIDOR SCHEME PROPOSED SURFACE WATER DRAINAGE WORKS			
Drawing File Name: BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0052	Sheet Number: 52 of 54	Status: A	Rev: M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY

NOTES:

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

ABBREVIATIONS:
 ADR: ALLOWABLE DISCHARGE RATE
 Vol_{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		

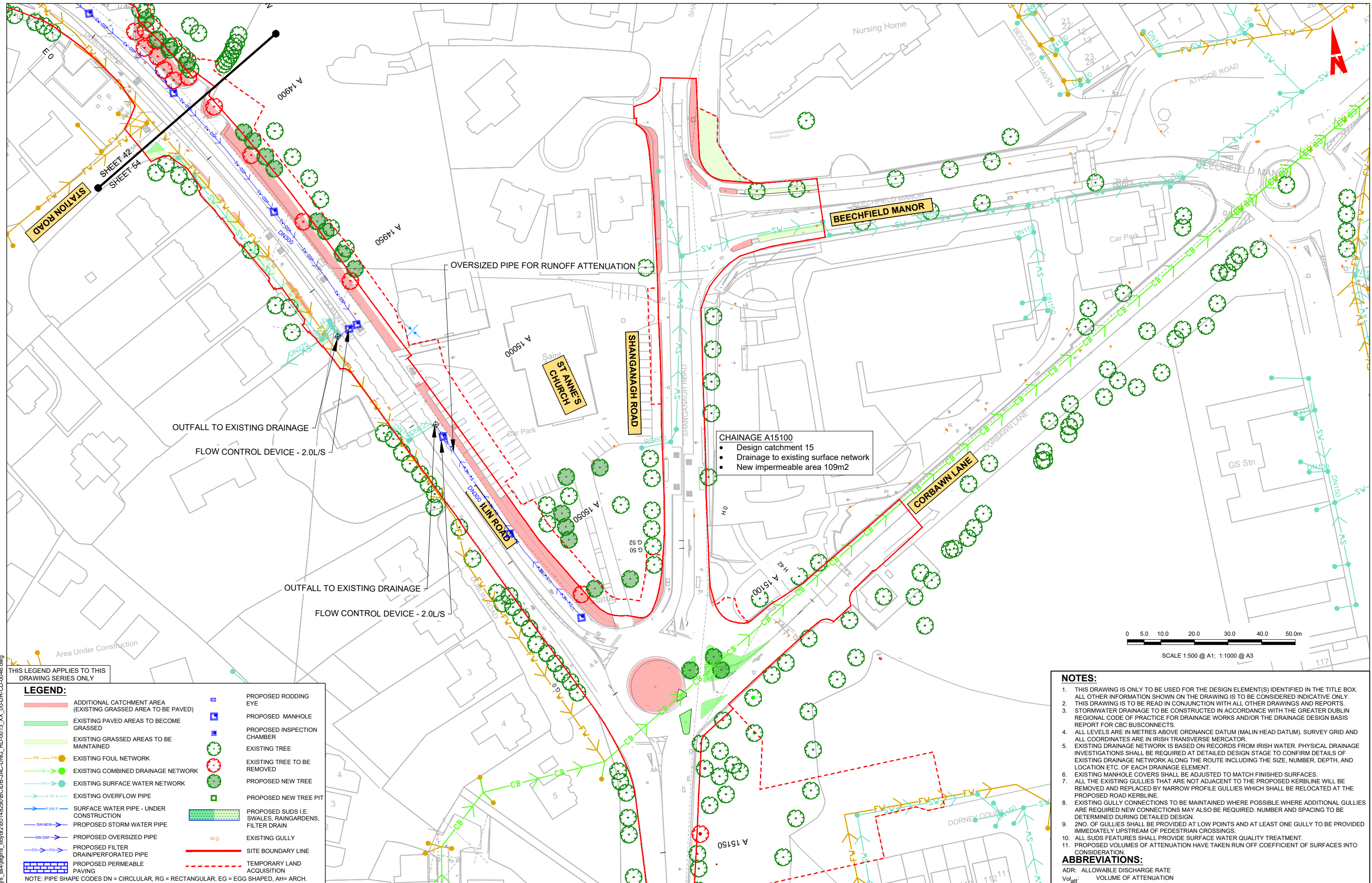
NOTE: PIPE SHAPE CODES DN = CIRCULAR, RG = RECTANGULAR, EG = EGG SHAPED, AH= ARCH.

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

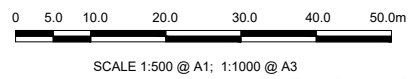
<p>Disclaimer</p> <p>a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.</p> <p>b. This drawing is to be used for the design element identified in the title box. Other information shown in this drawing is for indicative only. The drawing is to be read in conjunction with all other relevant design drawings.</p> <p>c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI, NMA, 180 National Transport Authority. All elevations are in metres and relate to OSi Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSi active local GPS station.</p> <p>d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.</p> <p>e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.</p>		<p>Rev</p> <table border="1"> <tr> <th>Rev</th> <th>Date</th> <th>Dm</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	Dm	Chk'd	App'd	Description	M01	08/05/2023	BD	NS	RS	ISSUE FOR PHASE 4: PLANNING	<p>Client</p> <p>NTA Ódarás Náisiúnta Iompair National Transport Authority</p>		<p>Engineering Designer</p> <p>Jacobs</p>			<p>Programme Title</p> <p>BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p>	
Rev	Date	Dm	Chk'd	App'd	Description																	
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>OMS Code</p>		<p>Drawing File Name</p> <p>BCIDB-JAC-DNG_RD-0013_XX_00-DR-CD-0053</p>		<p>Sheet Number</p> <p>53 of 54</p>		<p>Status</p> <p>A</p>												
								<p>Rev</p> <p>M01</p>														

DO NOT SCALE USE FIGURED DIMENSIONS ONLY



CHAINAGE A15100

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



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.

NOTES:

1. THIS DRAWING IS ONLY TO BE USED FOR THE DESIGN ELEMENT(S) IDENTIFIED IN THE TITLE BOX. ALL OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND REPORTS.
3. STORMWATER DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS AND/OR THE DRAINAGE DESIGN BASIS REPORT FOR CBC BUSCONNECTS.
4. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (MALIN HEAD DATUM), SURVEY GRID AND ALL COORDINATES ARE IN IRISH TRANSVERSE MERCATOR.
5. EXISTING DRAINAGE NETWORK IS BASED ON RECORDS FROM IRISH WATER. PHYSICAL DRAINAGE INVESTIGATIONS SHALL BE REQUIRED AT DETAILED DESIGN STAGE TO CONFIRM DETAILS OF EXISTING DRAINAGE NETWORK ALONG THE ROUTE INCLUDING THE SIZE, NUMBER, DEPTH, AND LOCATION ETC. OF EACH DRAINAGE ELEMENT.
6. EXISTING MANHOLE COVERS SHALL BE ADJUSTED TO MATCH FINISHED SURFACES.
7. ALL THE EXISTING GULLIES THAT ARE NOT ADJACENT TO THE PROPOSED KERBLINE WILL BE REMOVED AND REPLACED BY NARROW PROFILE GULLIES WHICH SHALL BE RELOCATED AT THE PROPOSED ROAD KERBLINE.
8. EXISTING GULLY CONNECTIONS TO BE MAINTAINED WHERE POSSIBLE. WHERE ADDITIONAL GULLIES ARE REQUIRED NEW CONNECTIONS MAY ALSO BE REQUIRED. NUMBER AND SPACING TO BE DETERMINED DURING DETAILED DESIGN.
9. 2NO. OF GULLIES SHALL BE PROVIDED AT LOW POINTS AND AT LEAST ONE GULLY TO BE PROVIDED IMMEDIATELY UPSTREAM OF PEDESTRIAN CROSSINGS.
10. ALL SUDS FEATURES SHALL PROVIDE SURFACE WATER QUALITY TREATMENT.
11. PROPOSED VOLUMES OF ATTENUATION HAVE TAKEN RUN OFF COEFFICIENT OF SURFACES INTO CONSIDERATION.

ABBREVIATIONS:

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

Disclaimers

a. © National Transport Authority (NTA) 2022. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.

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

c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2022/OSI_NMA_180 National Transport Authority. All elevations are in metres and relate to OS Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.

d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superseded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it). Any liabilities are hereby expressly disclaimed.

Project Ireland 2040
Building Ireland's Future

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

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

Engineering Designer: **Jacobs**

Date	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	BRTAY 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-0054	54 of 54	A	M01

DO NOT SCALE USE FIGURED DIMENSIONS ONLY