WML CONSULTING
Civil, Structural and Geotechnical Engineers

DRAINAGE INSTALLATION VERIFICATION REPORT

for a development at

GLENDENE, WYTHENSHAWE

Undertaken on behalf of

THE CASEY GROUP LTD

Report No. 9003-WML-ZZ-XX-RP-C-1000

January 2024

Report Title:	**Drainage Installation Verification Report**
Report Reference:	**9003-WML-ZZ-XX-RP-C-1000**
Client:	**The Casey Group Ltd**
Issue Date:	**January 2024**
Drafted By:	**Daniel Baker**
Authorised By:	**Natalie Brock**

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1.0 WML Consulting have been commissioned by The Casey Group Ltd (TCGL) to provide a response to planning condition 15 of planning consent ref. 129195 / FO / 2021.

1.1 The proposed development relates to the construction of a new residential development, comprising 56no low rise residential houses and associated parking / landscaping following the demolition of the former children's care home.

1.2 Condition 15 of this consent is as below in blue font.

No development hereby permitted shall be occupied until details of the implementation, maintenance and management of the sustainable drainage scheme have been submitted to and approved by the local planning authority. The scheme shall be implemented and thereafter managed and maintained in accordance with the approved details. Those details shall include:

- Verification report providing photographic evidence of construction as per design drawings;
- As built construction drawings if different from design construction drawings;
- Management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime.

Reason: To manage flooding and pollution and to ensure that a managing body is in place for the sustainable drainage system and there is funding and maintenance mechanism for the lifetime of the development.

1.3 In response to the above WML have produced this document which contains a series of appendices as listed below

- **Appendix A** – drawings indicating the as installed below ground drainage infrastructure.

  Note that TCGL have confirmed that the below ground drainage proposals were installed in line with WML's construction status drawings and calculations.

- **Appendix B** – Surface water drainage calculations for the systems indicated on drawing 1001.
- **Appendix C** – Photographs of the installation of the drainage infrastructure.

Maintenance of the below ground drainage system

1.5 It is understood that a portion of the proposed site drainage system, primarily constrained within the new extent of adoptable highway has been adopted by United Utilities (UU). The extent of adopted drainage has been indicated on WML Drawings 9003-WML-ZZ-XX-DR-C-1001 – 1005.

1.6 The inspection, maintenance and repair of this drainage falls under the responsibility of United Utilities and therefore any issues with said drainage should be raised with them directly using the following contact information;

- UU Customer Services: +44 (0)345 6723 723
- https://www.unitedutilities.com/help-and-support/contact-us/

1.7 It should also be noted that the road gullies and associated lateral connections located within the extent of adoptable highway fall under the ownership of the local highway's authority and therefore any issues with said drainage should be raised with them directly using the following contact information;

- Manchester City Council Switchboard: +44 (0)161 234 5000

1.8 The remaining drainage is understood to be the shared responsibility of the residents or site owners' management team / company. Though it may be necessary to involve a specialist drainage maintenance company also as and when needed.

1.9 The below ground foul and surface water drainage proposals indicated are relatively traditional in nature, and should provide years of relatively low maintenance operation in relation to the anticipated lifespan of the proposed development.

1.10 In line with current good practice: -

- **Gullies and linear drainage channels.** These should be inspected and / or cleaned out at 6 monthly intervals or following heavy storms that may wash detritus into them. Any problems highlighted by these inspections will need to be investigated, possibly by CCTV survey, to confirm the nature of the problem and to allow it to be remedied in a timely manner.

- **Inspection chambers, manholes, catchpits, etc.** These should be inspected at 6 monthly intervals or following heavy storms to ensure that the pipework associated with them is running freely. Any problems highlighted by these inspections will need to be investigated, possibly by CCTV survey, to confirm the nature of the problem and to allow it to be remedied in a timely manner.

- **Hydrobrake flow controls.** It has been necessary to incorporate 3No. Hydrobrake flow control devices as part of the proposed surface water design. These should be inspected at 6 monthly intervals or following heavy storms to ensure that the pipework associated with them is running freely. Any problems highlighted by these inspections will need to be investigated, possibly by CCTV survey, to confirm the nature of the problem and to allow it to be remedied in a timely manner.

  Two of the proposed Hydrobrake flow control units are located within the extent of adoptable drainage and therefore any maintenance requirement will be under the ownership and responsibility of United Utilities, however the third is located within the private drainage system.

  The flow control manufacturer, Hydro International, provides a cleaning, maintenance and repair services for the hydrobrake that includes; scheduled cleaning, emergency breakdown assistance, on-site repairs, equipment strip-down, planned maintenance & planned spares replacements. Should this be of interest to the occupier, the contact information for Hydro International can be found below;

  Hydro International
  Unit 2 Rivermead Court,
  Kenn Business Park,
  Clevedon,
  BS21 6FT
  +44 (0)1275 878371
  enquiries@hydro-int.com

1.11 It is anticipated that the majority of the maintenance of the below ground drainage system will be carried out by the site owner's management team / company. Though it may be necessary to involve a specialist drainage maintenance company also as and when needed.

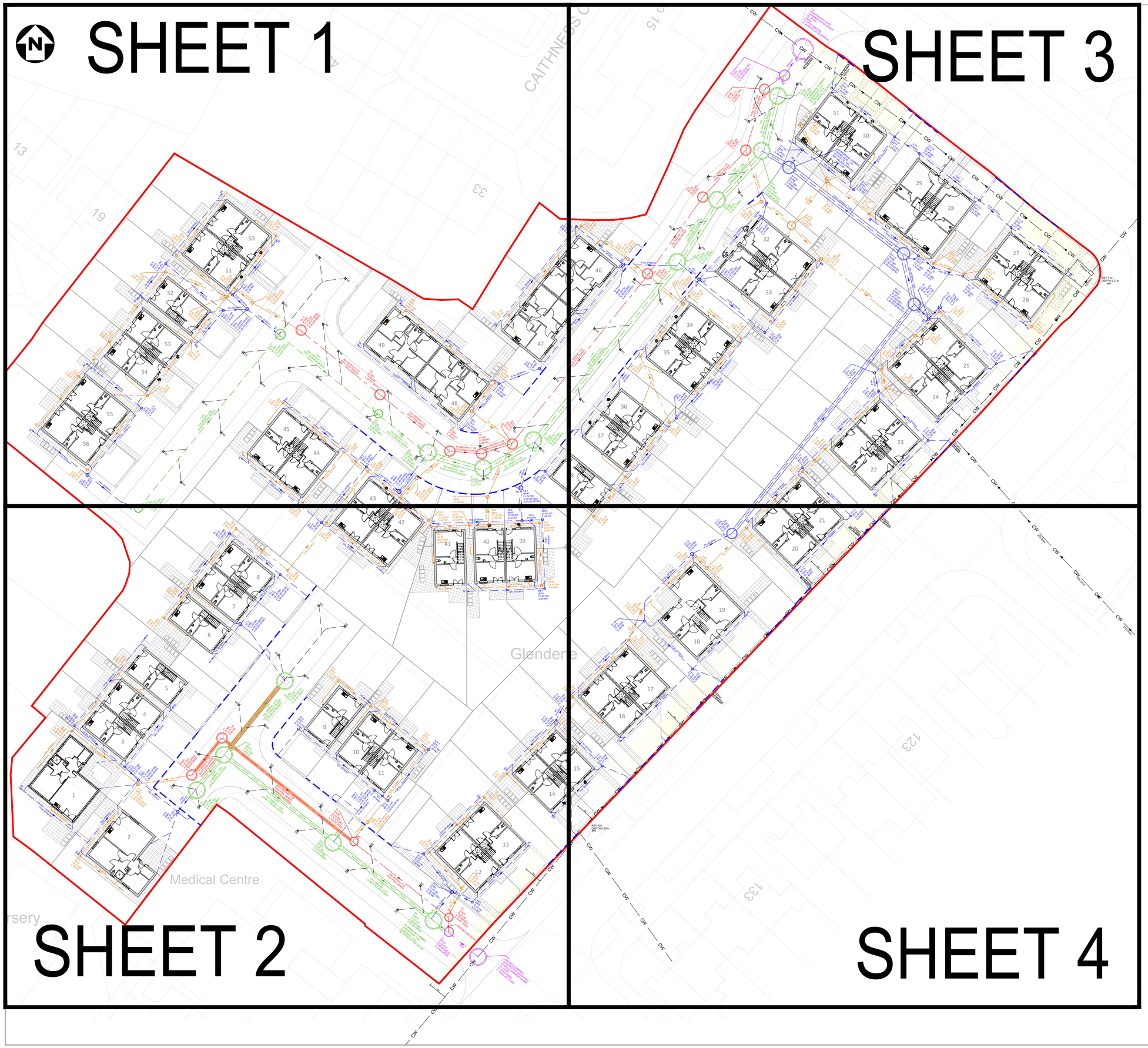
1.12 TCGL will be responsible for the maintenance of the below ground drainage systems for twelve months following handover of the development, currently forecast to happen 11th Feb 2022.

1.13 Wythenshawe Community Housing Group will be responsible for the maintenance of the below ground drainage systems after 26th Jan 2024.

1.14 It is considered that this document with its various appendices adequately responds to the information requested via planning condition 15, and hence it can be discharged.

APPENDIX A

Record Drawings



LEGEND

- PROPOSED PRIVATE SURFACE WATER SEWER
- PROPOSED PROPOSED FOUL WATER SEWER
- PROPOSED ADOPTED SURFACE WATER SEWER
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R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project
GLENDENE,
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CLIENT
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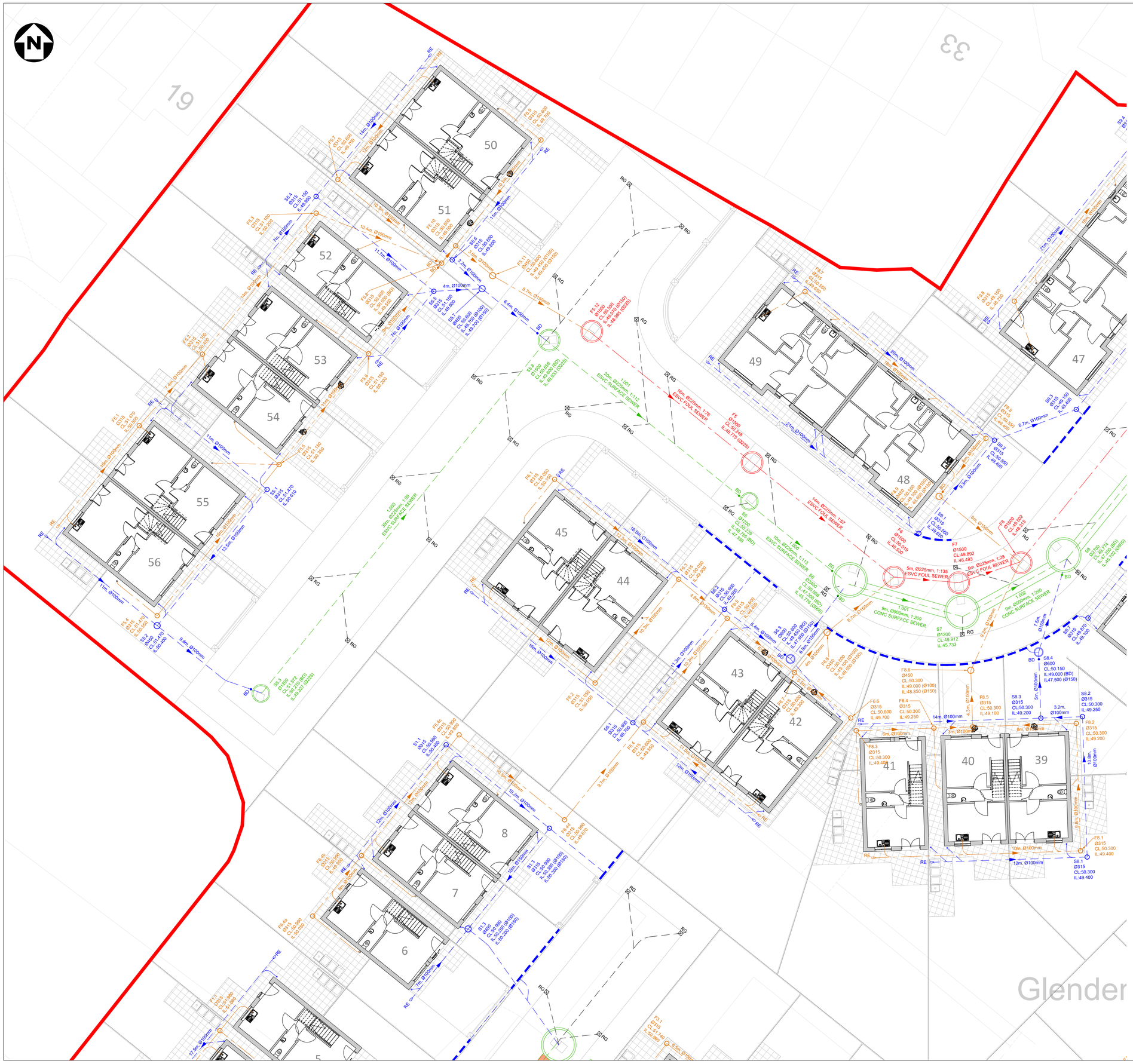
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PROPOSED DRAINAGE LAYOUT
OVERVIEW

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SCALE IN METRES 0 2 4 6 8 10 12 14 — 1:200

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Title: PROPOSED DRAINAGE LAYOUT SHEET 1

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FOR DETAILS OF GREASE TRAP/MACERATOR REQUIREMENTS ASSOCIATED WITH KITCHENS REFER TO SERVICE ENGINEER.

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CONNECTIONS TO CARRIER DRAINS ARE TO BE 'Y' JUNCTIONS.

ALL PRIVATE DRAINAGE IS TO COMPLY WITH BS EN 752 AND BUILDING REGS. PART H.

PIPE GRADIENTS ARE INDICATIVE MINIMUMS.

SURFACE CHANNEL DRAINS TO BE ACO MULTIDRAIN OR SIMILAR.

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ALL PROPOSED NEW MANHOLES TO BE PRECAST RING MANHOLES TYPE B UNLESS NOTED OTHERWISE. INTERNAL DIAMETERS OF MANHOLES TO BE 1050Ø mm WHERE DEPTH TO PIPE SOFFIT IS LESS THAN 1.5m, AND 1200mm Ø ELSEWHERE UNLESS NOTED OTHERWISE. IC - DENOTES POLYPROPYLENE INSPECTION CHAMBER BY 'HEPWORTH' OR SIMILAR APPROVED INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

MANHOLE COVERS:

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CARRIAGEWAYS WITHIN 0.5m OF KERB - EN124 CLASS C250
SLOW MOVING HGV [38t] - EN 124 CLASS B125 SLOW MOVING
GLV [10t] - EN 124 CLASS B125 SLOW MOVING PRIVATE CARS - EN124 CLASS B125.

INTERNAL - JONES OF OSWESTRY - SUPRASTEEL DOUBLE SEALED WITH NEOPRENE GASKET AND COVER GREASE OR SIMILAR APPROVED.

REFER TO ARCHITECTS DRAWINGS FOR DETAILS OF ANY MANHOLE COVERS WHICH REQUIRE INSET PANELS.

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Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

CLIENT: BTP ARCHITECTS

Title: PROPOSED DRAINAGE LAYOUT SHEET 2

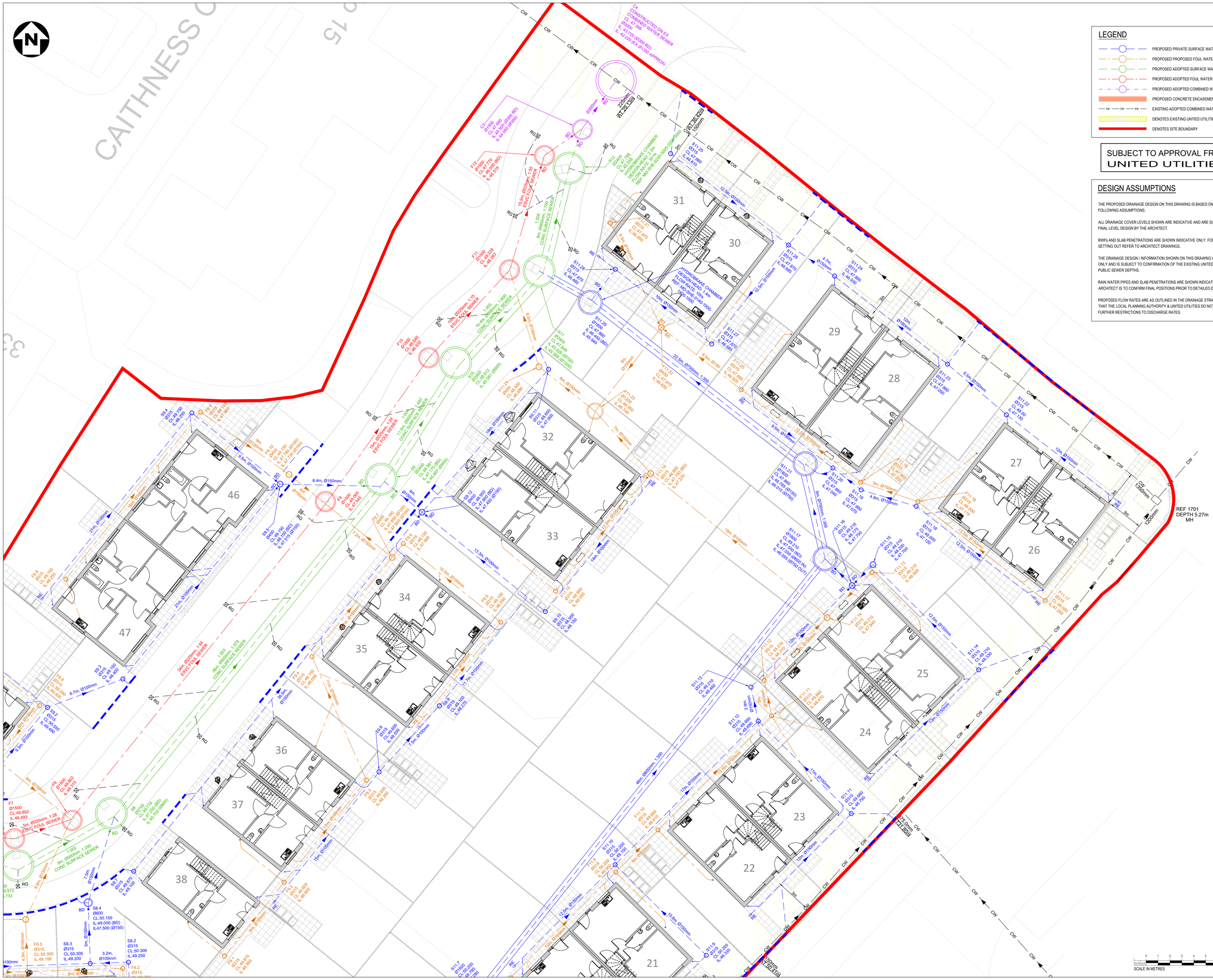
Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:100 @ A0

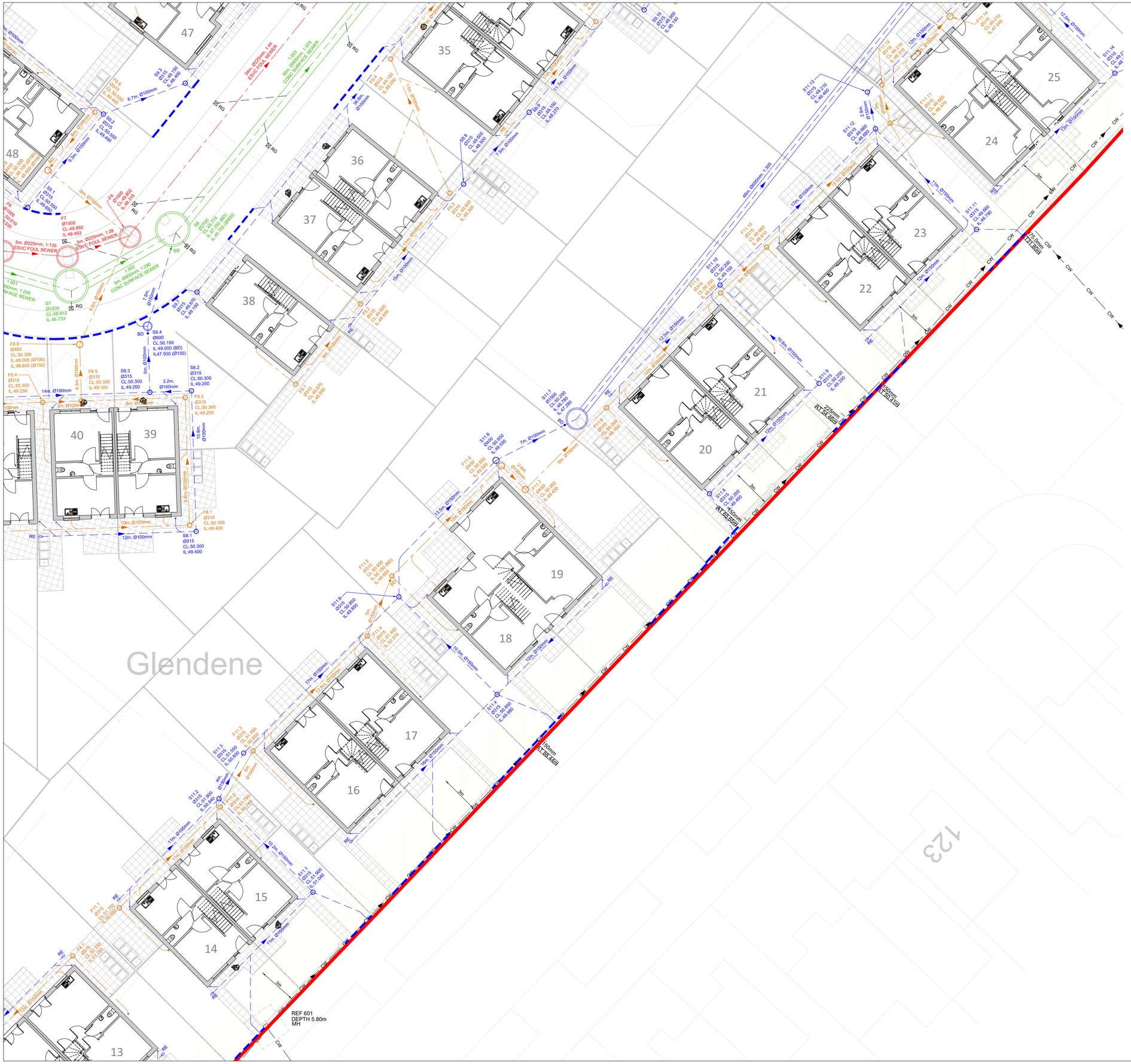
WML CONSULTING Chartered Civil and Structural Engineers

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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML -	ZZ -	XX -	DR -	C -	1003	R01

SCALE IN METRES 0 1 2 3 4 5 6 7 1:100


CAITHNESS CLOSE
N
LEGEND
PROPOSED PRIVATE SURFACE WATER SEWER
PROPOSED PROPOSED FOUL WATER SEWER
PROPOSED ADOPTED SURFACE WATER SEWER
PROPOSED ADOPTED FOUL WATER SEWER
PROPOSED ADOPTED COMBINED WATER SEWER
PROPOSED CONCRETE ENCASEMENT TO SEWER
EXISTING ADOPTED COMBINED WATER SEWER
DENOTES EXISTING UNTIED UTILITIES EASEMENT
DENOTES SITE BOUNDARY
SUBJECT TO APPROVAL FROM UNITED UTILITIES
DESIGN ASSUMPTIONS
THE PROPOSED DRAINAGE DESIGN ON THIS DRAWING IS BASED ON THE FOLLOWING ASSUMPTIONS;
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THE DRAINAGE DESIGN / INFORMATION SHOWN ON THIS DRAWING IS INDICATIVE ONLY AND IS SUBJECT TO CONFIRMATION OF THE EXISTING UNITED UTILITIES PUBLIC SEWER DEPTHS.
RAIN WATER PIPES AND SLAB PENETRATIONS ARE SHOWN INDICATIVE ONLY. ARCHITECT IS TO CONFIRM FINAL POSITIONS PRIOR TO DETAILED DESIGN.
PROPOSED FLOW RATES ARE AS OUTLINED IN THE DRAINAGE STRATEGY ASSUME THAT THE LOCAL PLANNING AUTHORITY & UNITED UTILITIES DO NOT IMPOSE FURTHER RESTRICTIONS TO DISCHARGE RATES.
GENERAL NOTES
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ALL INTERNAL MANHOLE COVERS TO BE DOUBLE SEALED, LOCKABLE AND RECESSED TO ACCEPT FLOOR FINISHES WHERE APPLICABLE.
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R01 FINAL CONSTRUCTION ISSUE. 11.01.24 DB LoG
Rev. Amendment Date By Chkd
Project GLENDENE, WYTHENSHAWE
CLIENT BTP ARCHITECTS
Title PROPOSED DRAINAGE LAYOUT SHEET 3
Drawn DB Checked LoG Date SEPT 21 Scale 1:100 @ A0
WML CONSULTING Chartered Civil and Structural Engineers
No.8 Oak Green Earl Road Stanley Green Business Park Cheadle Hulme Cheshire SK8 6QL
Tel: 0161 482 0600
Fax: 0161 486 9210
e-mail info@wmlconsulting.com
www.wmlconsulting.com
Project 9003 - Originator WML - Volume ZZ - Level XX - Type DR - Role C - Number 1004 - Rev R01
SCALE IN METRES 0 1 2 3 4 5 6 7 1:100
REF 1701 DEPTH 5.27m MH
46
47
31
30
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LEGEND

- PROPOSED PRIVATE SURFACE WATER SEWER
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Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

CLIENT: BTP ARCHITECTS

Title: PROPOSED DRAINAGE LAYOUT SHEET 4

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:100 @ A0

SCALE IN METRES 0 1 2 3 4 5 6 7 1:100

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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML	- ZZ	- XX	- DR	- C	- 1005	R01



LEGEND

- PROPOSED PRIVATE SURFACE WATER SEWER
- PROPOSED PROPOSED FOUL WATER SEWER
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- PROPOSED CONCRETE ENCASEMENT TO SEWER
- EXISTING ADOPTED COMBINED WATER SEWER
- DENOTES EXISTING UNITED UTILITIES EASEMENT
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SUBJECT TO APPROVAL FROM UNITED UTILITIES

DESIGN ASSUMPTIONS

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R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

CLIENT: BTP ARCHITECTS

Title: SECTION 104 - PROPOSED DRAINAGE LAYOUT OVERVIEW

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:200 @ A0

SCALE IN METRES 0 2 4 6 8 10 12 14 — 1:200

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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML	- ZZ	- XX	- DR	- C	- 1011	R01



LEGEND

- PROPOSED PRIVATE SURFACE WATER SEWER
- PROPOSED PROPOSED FOUL WATER SEWER
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SCALE IN METRES 0 1 2 3 4 5 6 7 — 1:100

Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

CLIENT: BTP ARCHITECTS

Title: SECTION 104 - PROPOSED DRAINAGE LAYOUT SHEET 1

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:100 @ A0

WML CONSULTING
Chartered Civil and Structural Engineers
No.8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire SK8 6QL
Tel 0161 482 0600
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e-mail info@wmlconsulting.com
www.wmlconsulting.com

Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	WML	ZZ	XX	DR	C	1012	R01



LEGEND

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Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

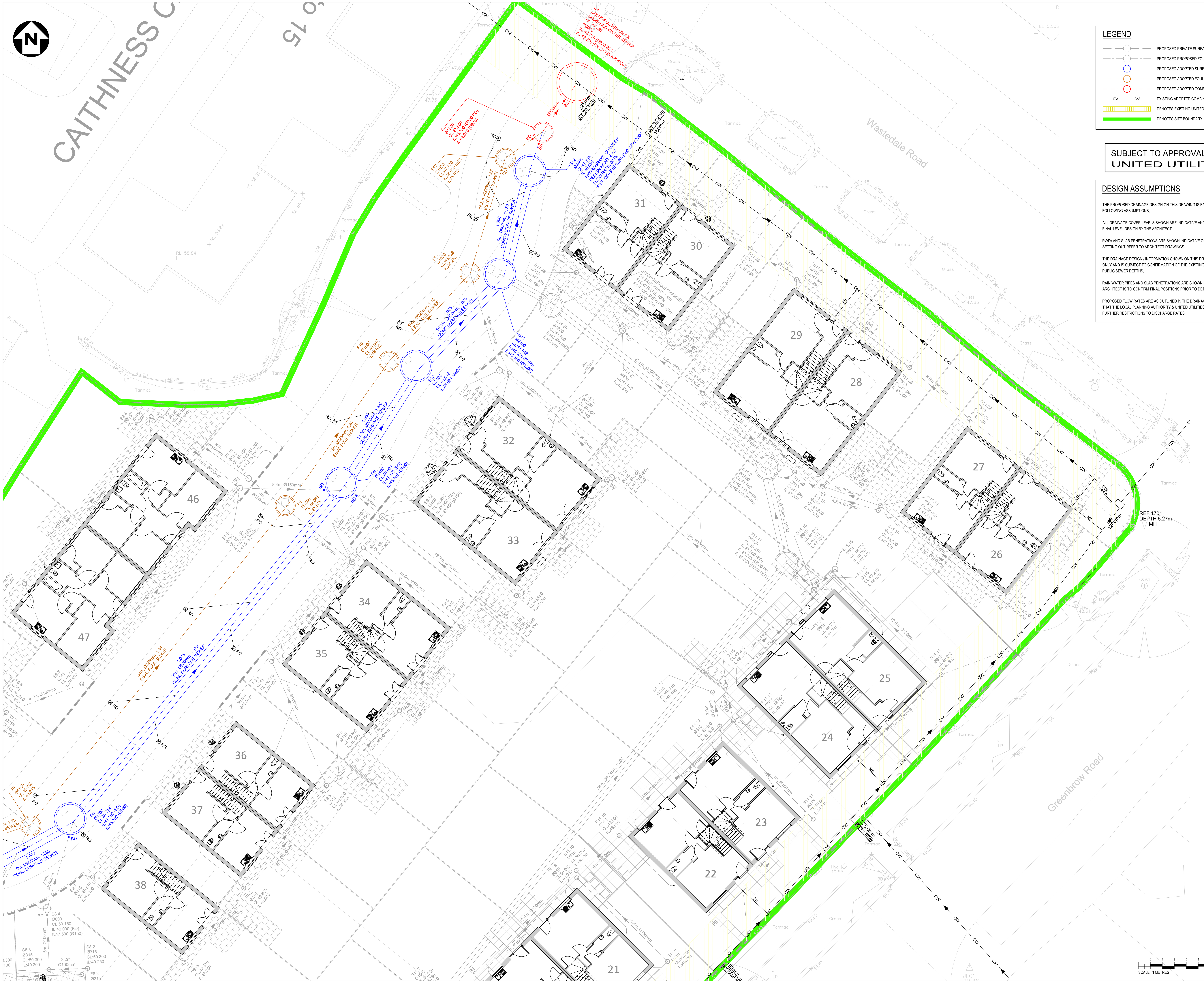
CLIENT: BTP ARCHITECTS

Title: SECTION 104 - PROPOSED DRAINAGE LAYOUT SHEET 2

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:100 @ A0

WML CONSULTING Chartered Civil and Structural Engineers
No.8 Oak Green
Earl Road
Stanley Green Business Park
Cheadle Hulme
Cheshire SK8 6QL
Tel 0161 482 0600
Fax 0161 486 9210
e-mail info@wmlconsulting.com
www.wmlconsulting.com

Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML	- ZZ	- XX	- DR	- C	- 1013	R01



LEGEND

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SCALE IN METRES 0 1 2 3 4 5 6 7 — 1:100

Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

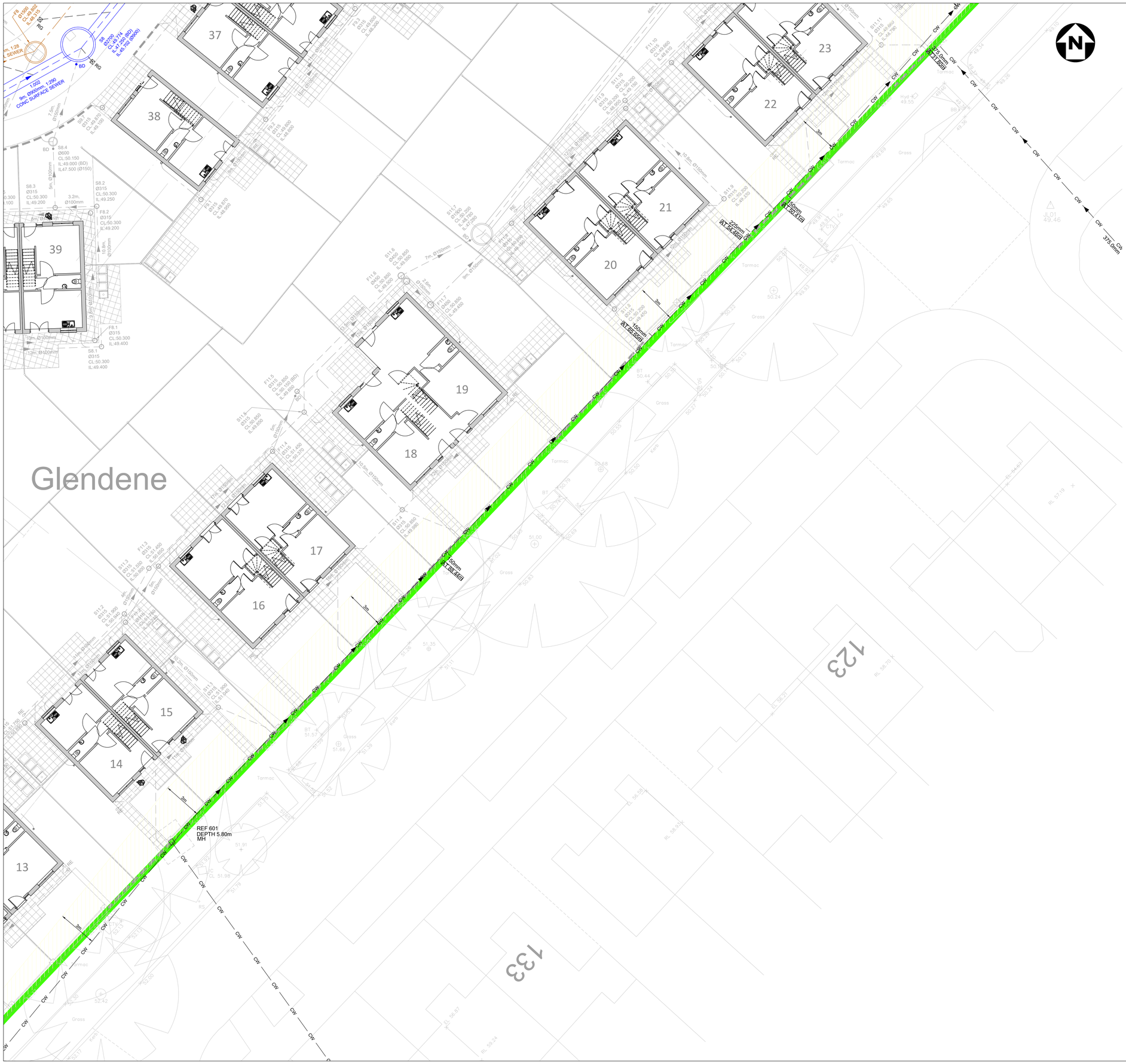
CLIENT: BTP ARCHITECTS

Title: SECTION 104 - PROPOSED DRAINAGE LAYOUT SHEET 3

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:100 @ A0

WML CONSULTING Chartered Civil and Structural Engineers
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Tel 0161 482 0600
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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	WML	ZZ	XX	DR	C	1014	R01



LEGEND

- PROPOSED PRIVATE SURFACE WATER SEWER
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ALL PIPEWORK TO BE INSTALLED WITH SOFFITS LEVEL (E.G. AT CHANGES IN PIPE SIZE) U.N.O.

FOR DETAILS OF GREASE TRAP/MACERATOR REQUIREMENTS ASSOCIATED WITH KITCHENS REFER TO SERVICE ENGINEER.

ON COMPLETION OF DRAINAGE WORKS, THE NEW DRAINAGE SYSTEM IS TO BE THOROUGHLY CLEANED AND A CCTV SURVEY CARRIED OUT TO CONFIRM NO CONSTRUCTION DEBRIS OR BLOCKAGES REMAIN.

CONNECTIONS TO CARRIER DRAINS ARE TO BE 'Y' JUNCTIONS.

ALL PRIVATE DRAINAGE IS TO COMPLY WITH BS EN 752 AND BUILDING REGS. PART H.

PIPE GRADIENTS ARE INDICATIVE MINIMUMS.

SURFACE CHANNEL DRAINS TO BE ACO MULTIDRAIN OR SIMILAR.

MANHOLES:

ALL PROPOSED NEW MANHOLES TO BE PRECAST RING MANHOLES TYPE B UNLESS NOTED OTHERWISE. INTERNAL DIAMETERS OF MANHOLES TO BE 1050/0mm WHERE DEPTH TO PIPE SOFFIT IS LESS THAN 1.5m, AND 1200mm Ø ELSEWHERE UNLESS NOTED OTHERWISE. IC - DENOTES POLYPROPYLENE INSPECTION CHAMBER BY 'HEPWORTH' OR SIMILAR APPROVED INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

MANHOLE COVERS:

CARRIAGEWAYS GENERAL - EN124 CLASS D400
CARRIAGEWAYS WITHIN 0.5m OF KERB - EN124 CLASS C250
SLOW MOVING HGV [3B] - EN 124 CLASS B125 SLOW MOVING GLV [10] - EN 124 CLASS B125 SLOW MOVING PRIVATE CARS - EN124 CLASS B125.

INTERNAL - JONES OF OSWESTRY - SUPRASTEEL DOUBLE SEALED WITH NEOPRENE GASKET AND COVER GREASE OR SIMILAR APPROVED.

REFER TO ARCHITECTS DRAWINGS FOR DETAILS OF ANY MANHOLE COVERS WHICH REQUIRE INSET PANELS.

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Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project: GLENDENE, WYTHENSHAWE

CLIENT: BTP ARCHITECTS

Title: SECTION 104 - PROPOSED DRAINAGE LAYOUT SHEET 4

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:100 @ A0

SCALE IN METRES 0 1 2 3 4 5 6 7 1:100

WML CONSULTING Chartered Civil and Structural Engineers
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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML	- ZZ	- XX	- DR	- C	- 1015	R01



LEGEND

- PROPOSED PRIVATE SURFACE WATER SEWER
- PROPOSED PROPOSED FOUL WATER SEWER
- PROPOSED ADOPTED SURFACE WATER SEWER
- PROPOSED ADOPTED FOUL WATER SEWER
- PROPOSED ADOPTED COMBINED WATER SEWER
- EXISTING ADOPTED COMBINED WATER SEWER

SUBJECT TO APPROVAL FROM
UNITED UTILITIES

DESIGN ASSUMPTIONS

THE PROPOSED DRAINAGE DESIGN ON THIS DRAWING IS BASED ON THE FOLLOWING ASSUMPTIONS;

ALL DRAINAGE COVER LEVELS SHOWN ARE INDICATIVE AND ARE SUBJECT TO FINAL LEVEL DESIGN BY THE ARCHITECT.

RWPs AND SLAB PENETRATIONS ARE SHOWN INDICATIVE ONLY. FOR FINAL SETTING OUT REFER TO ARCHITECT DRAWINGS.

THE DRAINAGE DESIGN / INFORMATION SHOWN ON THIS DRAWING IS INDICATIVE ONLY AND IS SUBJECT TO CONFIRMATION OF THE EXISTING UNITED UTILITIES PUBLIC SEWER DEPTHS.

RAIN WATER PIPES AND SLAB PENETRATIONS ARE SHOWN INDICATIVE ONLY. ARCHITECT IS TO CONFIRM FINAL POSITIONS PRIOR TO DETAILED DESIGN.

PROPOSED FLOW RATES ARE AS OUTLINED IN THE DRAINAGE STRATEGY ASSUME THAT THE LOCAL PLANNING AUTHORITY & UNITED UTILITIES DO NOT IMPOSE FURTHER RESTRICTIONS TO DISCHARGE RATES.

GENERAL NOTES

DO NOT SCALE FROM THIS DRAWING WORK TO FIGURED DIMENSIONS ONLY.

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ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.

THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH AND SAFETY PLAN.

SCALE IN METRES 0 2 4 6 8 10 12 14
1:200

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Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project
GLENDENE,
WYTHENSHAWE

CLIENT
BTP ARCHITECTS

Title
SECTION 104 - PROPOSED DRAINAGE AREA PLAN

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	1:200 @ A0

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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML -	ZZ -	XX -	DR -	C -	1016	R01

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THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH AND SAFETY PLAN.

ALL DRAINAGE FITTINGS TO BE SUPERSLEVE VITRIFIED CLAY PIPES OR SIMILAR.



COORDINATES		
POINTS	EASTING	NORTHING
SP01	381058920.132	387595195.284
SP02	381111010.825	387748924.583

Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project
GLENDENE,
WYTHENSHAWE

Status
FINAL CONSTRUCTION

ARCH/CLIENT
BTP ARCHITECTS

Title
SECTION 104 - LAND REGISTRY PLAN

WML Job No.	Drawn	Checked	Date	Scale
9003	DB	LoG	APRIL 22	1:1000 @ A3

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Drawing No.

Project	Originator	Volume	Level	Type	Role	Number	Rev
9003 -	WML -	ZZ -	XX -	DR -	C -	1017	R01

GENERAL NOTES

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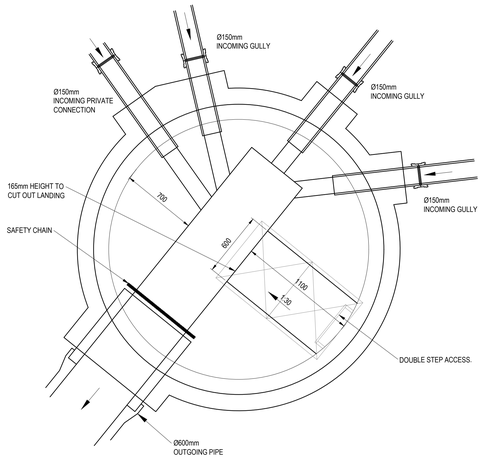
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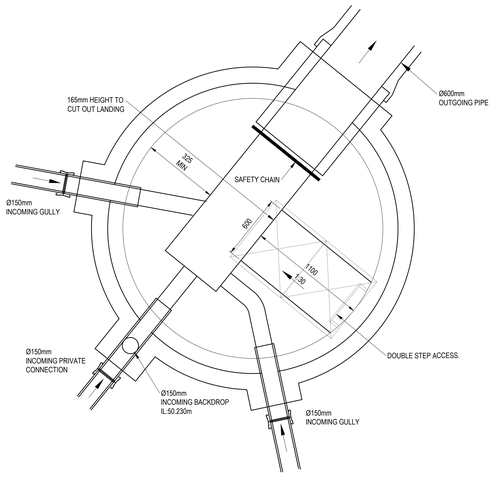
THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH AND SAFETY PLAN.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH WML DRAINAGE DETAIL DRAWINGS FOR DETAILS OF MATERIALS AND WORKMANSHIP REFER TO THE SPECIFICATION.

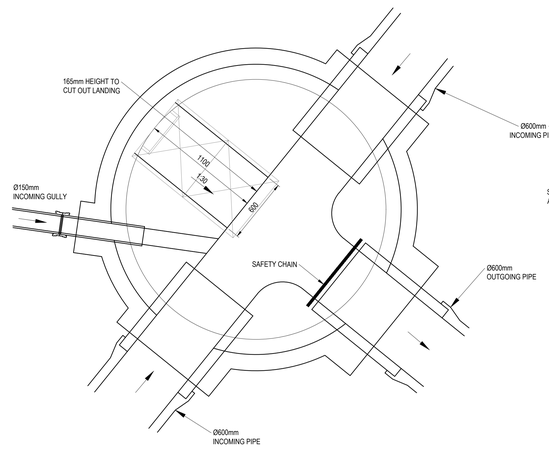
THE CONTRACTOR IS RESPONSIBLE FOR CHECKING INVERT LEVELS AND POSITIONS OF ALL EXISTING DRAINS, SEWERS, INSPECTION CHAMBERS AND MANHOLES SHOWN ON THIS DRAWING IMMEDIATELY ON SITE ESTABLISHMENT. ANY DISCREPANCIES MUST BE REPORTED TO WML CONSULTING IMMEDIATELY.



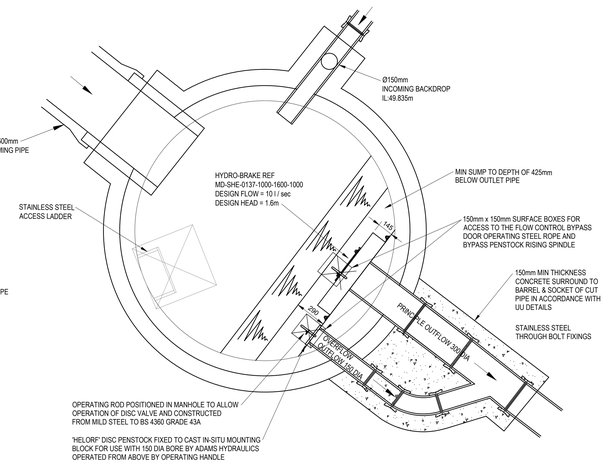
MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S1	E:381034.710 N:387642.715	51.022m	49.647m	0.775m	2.400m	1200x675 D400 150mm DEEP	PCC TYPE 4	1200x675



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S2	E:381020.880 N:387625.605	51.680	49.633	1.447m	2.400m	1200x675 D400 150mm DEEP	PCC TYPE 4	1200x675



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S3	E:381025.130 N:387631.170	51.548	49.618	1.330m	2.400m	1200x675 D400 150mm DEEP	PCC TYPE 4	1200x675



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S4	E:381057.270 N:387604.915	52.216m	49.457m	2.159m	2.400m	600x600 D400 150mm DEEP	FLOW CONTROL MH	750x600

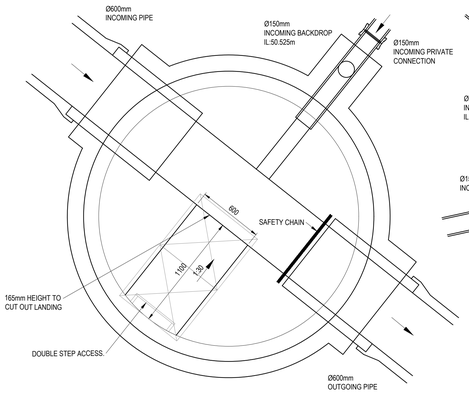
ROCKER PIPES TO BE INSTALLED ON ALL RIGID PIPES. JOINT TO BE AS CLOSE AS POSSIBLE TO FACE OF ALL MANHOLES TO PERMIT SATISFACTORY JOINT AND SUBSEQUENT MOVEMENT.

THE RECOMMENDED LENGTH OF THE NEXT PIPE (ROCKER PIPE) AWAY FROM THE MANHOLE FROM SEWERS FOR ADOPTION (6TH EDITION) SHOULD BE AS SHOWN IN THE TABLE BELOW:

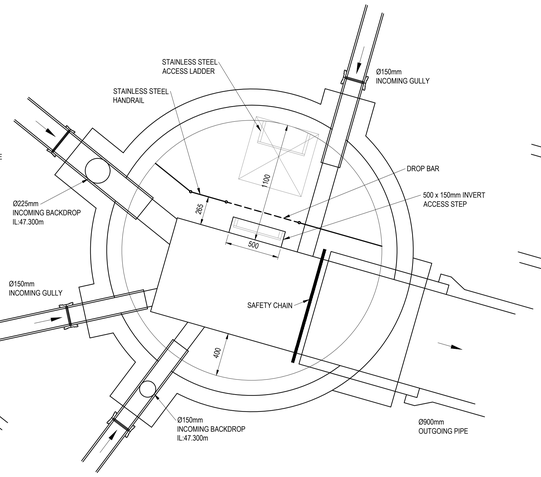
NOMINAL DIA. (mm)	EFFECTIVE LENGTH (m)
150 TO 600	0.6
675 TO 750	1.0
825 & OVER	1.25

WHERE LADDERS ARE USED, SEATING RINGS TO BE TURNED 180° TO ENSURE 600x600 ACCESS IS MAINTAINED WITH THE INCLUSION OF LADDERS.

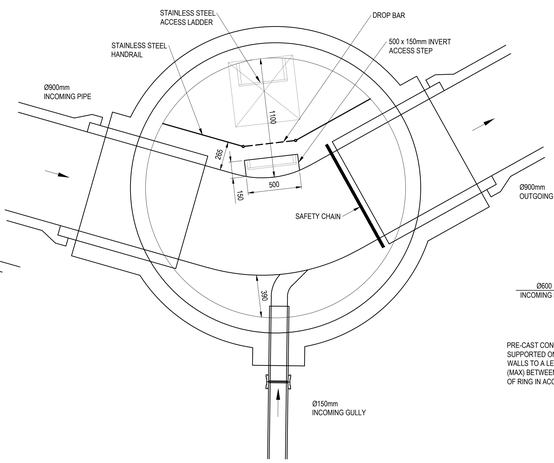
ALL LATERAL CONNECTIONS TO BE MADE AT SOFFIT LEVEL TO THE MAIN CHANNEL.



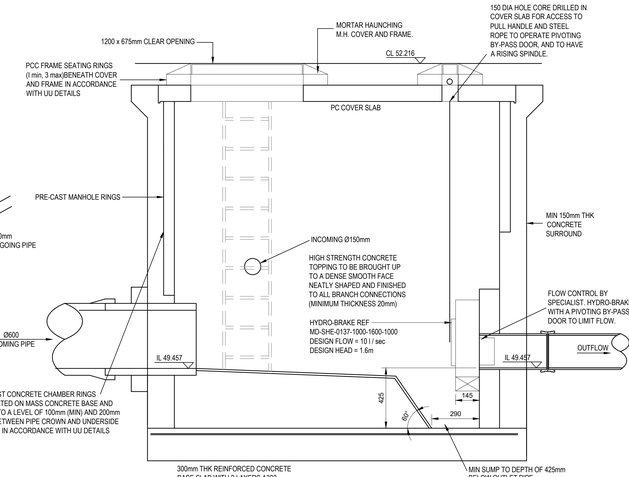
MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S3A	E:381042.250 N:387617.350	51.851	49.530	1.721m	2.400m	1200x675 D400 150mm DEEP	PCC TYPE 4	1200x675



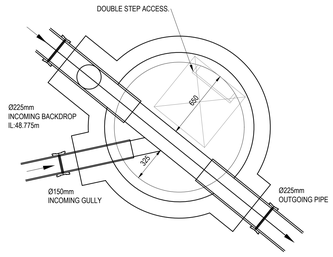
MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S6	E:381057.205 N:387678.650	50.068m	45.776m	3.392m	2.400m	600x600 D400 150mm DEEP	PCC TYPE 2	750x600



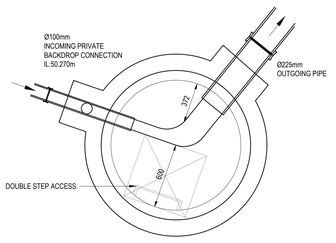
MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S7	E:381065.860 N:387676.185	49.912m	45.733m	3.279m	2.400m	600x600 D400 150mm DEEP	PCC TYPE 2	750x600



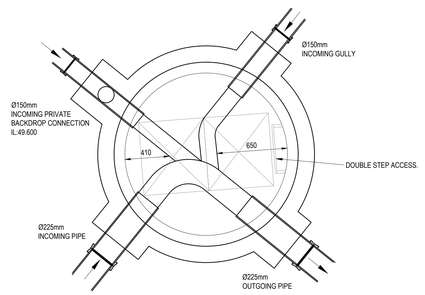
S4 - HYDRO- BRAKE SECTION



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S5	E:381049.425 N:387684.715	50.239m	47.388m	2.626m	1.200m	600x600 D400 150mm DEEP	PCC TYPE 1	750x750



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S5.3	E:381011.710 N:387669.875	51.572m	49.327m	2.020m	1.200m	600x600 D400 150mm DEEP	PCC TYPE 1	750x750



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S5.8	E:381033.965 N:387697.175	50.658m	48.933m	1.500m	1.500m	1200x675 D400 150mm DEEP	PCC TYPE 4	1200x675

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Rev.	Amendment	Date	By	Chkd
R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project
GLENDENE,
WYTHENSHAWE

CLIENT
BTP ARCHITECTS

Title
SECTION 104 - MANHOLE SCHEDULE SHEET 1
SURFACE WATER 1

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	AS NOTED @ A0

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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML -	ZZ -	XX -	DR -	C -	1021	R01

GENERAL NOTES

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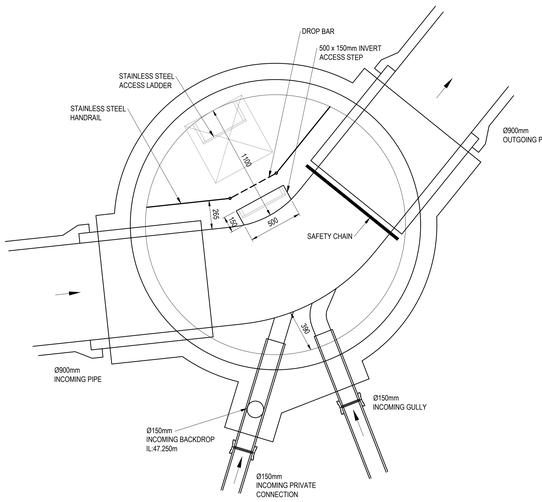
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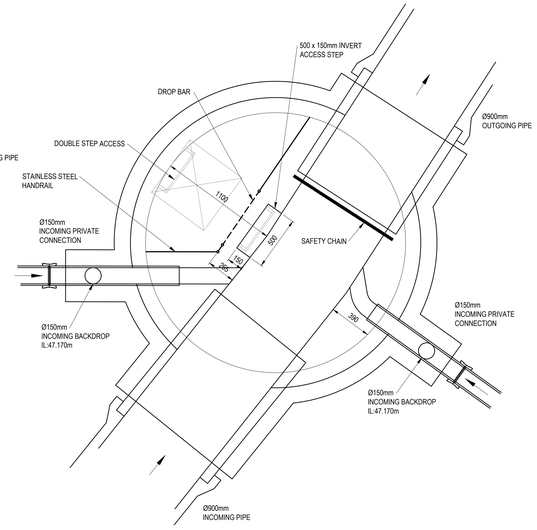
THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH AND SAFETY PLAN.

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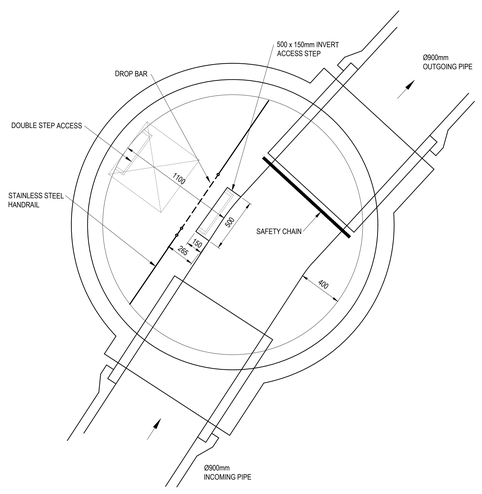
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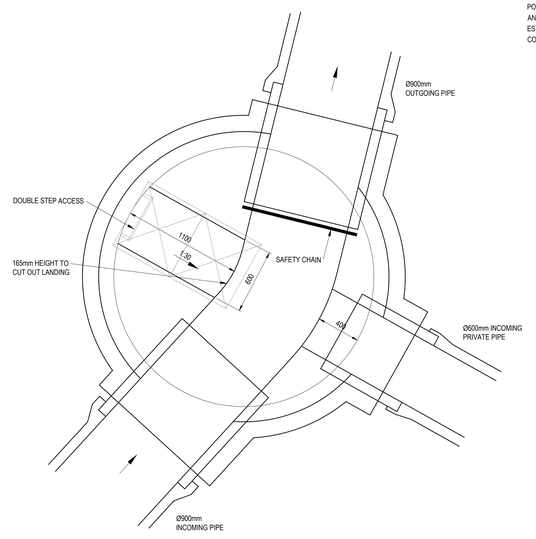
MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S8	E:381073.710 N:387680.575	49.774m	45.702m	3.172m	2.400m	600x600 D400 150mm DEEP	PCC TYPE 2	750x600



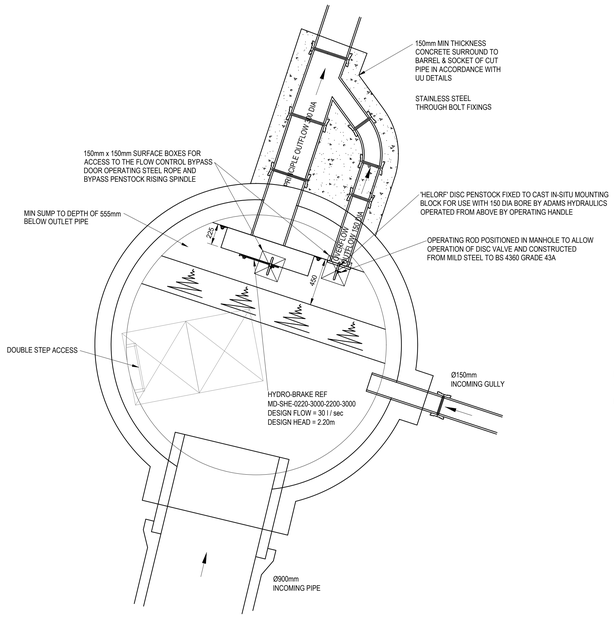
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S9	E:381073.710 N:387680.575	48.981m	45.607m	2.474m	2.400m	600x600 D400 150mm DEEP	PCC TYPE 2	750x600



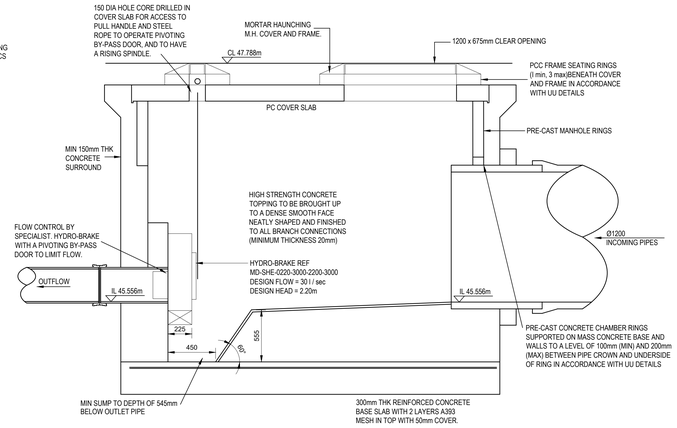
MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S10	E:381102.580 N:387718.350	48.612m	45.581m	2.131m	2.400m	600x600 D400 150mm DEEP	PCC TYPE 2	750x600



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S11	E:381109.570 N:387726.035	47.848m	45.568m	1.380m	2.400m	1200x675 D400 150mm DEEP	PCC TYPE 4	1200x675



MANHOLE REF	SETTING OUT	COVER LEVEL	INVERT LEVEL	DEPTH TO SOFFIT	MANHOLE DIAMETER	MANHOLE COVER	MANHOLE TYPE	COVER SLAB OPENING
S12	E:381109.570 N:387726.035	47.788m	45.556m	1.332m	2.400m	1200x675 D400 150mm DEEP	FLOW CONTROL MH	1200x675



S12 - HYDRO- BRAKE SECTION

ROCKER PIPES TO BE INSTALLED ON ALL R9GID PIPES. JOINT TO BE AS CLOSE AS POSSIBLE TO FACE OF ALL MANHOLES TO PERMIT SATISFACTORY JOINT AND SUBSEQUENT MOVEMENT.

THE RECOMMENDED LENGTH OF THE NEXT PIPE (ROCKER PIPE) AWAY FROM THE MANHOLE FROM SEWERS FOR ADOPTION (6TH EDITION) SHOULD BE AS SHOWN IN THE TABLE BELOW:

NOMINAL DIA (mm)	EFFECTIVE LENGTH (m)
150 TO 600	0.6
675 TO 750	1.0
825 & OVER	1.25

WHERE LADDERS ARE USED, SEATING RINGS TO BE TURNED 180° TO ENSURE 600x600 ACCESS IS MAINTAINED WITH THE INCLUSION OF LADDERS.

ALL LATERAL CONNECTIONS TO BE MADE AT SOFFIT LEVEL TO THE MAIN CHANNEL

SUBJECT TO APPROVAL FROM AND UNITED UTILITIES

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R01	FINAL CONSTRUCTION ISSUE.	11.01.24	DB	LoG

Project
GLENDENE, WYTHENSHAWE

CLIENT
BTP ARCHITECTS

Title
SECTION 104 - MANHOLE SCHEDULE SHEET 2
SURFACE WATER 2

Drawn	Checked	Date	Scale
DB	LoG	SEPT 21	AS NOTED @ A0

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Project	Originator	Volume	Level	Type	Role	Number	Rev
9003	- WML -	ZZ -	XX -	DR -	C -	1022	R01