Lathbury Road, Moston

DRAINAGE VERIFICATION REPORT

Lathbury Road, Moston

Drainage Verification Report

LRM-AJP-VV-XX-RP-C-3020

AJP Ref: 222-100

PREPARED BY JACK ROONEY

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Record of Approval	Originator:	Approved:	Date:
	J.Rooney Graduate Civil Engineer	K.O'Brien Director	31.03.2026
Version	Author:	Change Description:	
P01	J.Rooney	Original Issue	31.03.2026
P02	J.Rooney	Condition number amended	18.06.2026

Alan Johnston Partnership Ltd.

Company No. 13204766

Kenyon Lane, Moston

Drainage Verification Report

1.0 INTRODUCTION

This drainage verification report has been prepared on behalf of Jigsaw Homes North on in connection with the discharge of a planning condition associated with the construction of 6 properties as part of a larger residential development throughout Moston.

The purpose of this report is to discharge planning condition 11, the planning condition states the following:

"The development hereby approved shall not be occupied until details of the implementation, maintenance and management of a 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:
- A 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."

The report below demonstrates that the sustainable drainage system has been constructed in accordance with the agreed design, the surface water design has been designed to withstand storm up events up to and including 100 year rainfall events, including an additional 45% climate change allowance, and 10% urban creep where appropriate.

The sewers in question are to be privately maintained and agreed with United Utilities under a S106 agreement

2.0 Drainage Summary

AJP have been provided a selection photographs by the contractor on the project and a summary of the photographs is listed below:

- 7x Internal manhole pictures
- 1x Hydrobrake picture
- 1x Porous Driveway Picture

2.1 Details and Location of SuDS Elements

Below is a summary of the locations and details of the SuDS provided on this scheme.

Piped system

A piped system is in place throughout the scheme to convey flows from hardstanding areas into the existing combined water sewer. The system is to be privately maintained and as mentioned in the introduction to this report. Below is a list of the surface water manholes and their locations:

- S1 - Co-ordinates (385889.877, 400890.689) - 600mm Diameter
- S2 - Co-ordinates (385899.100, 400883.358) - 600mm Diameter
- S2a - Co-ordinates (385906.316, 400892.580) - 600mm Diameter
- S3 - Co-ordinates (385912.133, 400899.919) - 600mm Diameter
- S4 - Co-ordinates (385919.395, 400894.380) - 1500mm Diameter
- S5 - Co-ordinates (385924.221, 400900.416) - 1800mm Diameter Flow Control
- S6 - Co-ordinates (385901.247, 400878.359) - 1200mm Diameter
- S7 - Co-ordinates (385900.376, 400882.486) - 1200mm Diameter
- S8 - Co-ordinates (385907.799, 400891.988) - 1200mm Diameter
- S9 - Co-ordinates (385917.631, 400888.317) - 1200mm Diameter
- S10 - Co-ordinates (385918.744, 400911.697) - 600mm Diameter
- S11 - Co-ordinates (385927.042, 400904.946) - 600mm Diameter
- S12 - Co-ordinates (385897.083, 400899.919) - 600mm Diameter
- C1- Co-ordinates (385926.625, 400898.544) - 1200mm Diameter

Hydrobrake

The Hydro-Brake is provided to ensure that the surface water discharge from the site is restricted to the agreed maximum discharge rate, as set out in planning.

The Hydro-Brake is located within MHS5

Details for the Hydro-brake are as follows:

- Co-ordinates - x: 385924.221 y: 400900.416
- Manufacturer - Hydro-international
- Manufacturer Reference - MD-SHE-0100-5000-1350-5000
- Design Flow - 5.0l/s
- Design Head - 1.350m

The hydrobrake will be maintained under a S106 agreement with United Utilities.

Permeable Paving

The driveways within the site are constructed with permeable paving, which provides surface water treatment. The permeable paving will also provide water quality and remove hydrocarbons prior to being discharged to the adopted surface water drainage.

Operation and Maintenance

The sewers are to be maintained and as previously agreed with UU under a S106 agreement.

Details of the management company to operate and maintain the private drainage elements are:

- Name - Jigsaw Homes North
- Address - 56 King Street, Leigh, WN7 4LJ
- Telephone - 0300 111 1133

Jigsaw Homes North will be responsible for maintaining all the drainage works and all associated elements, including:

- Porous Paving
- ACO Drains

The maintenance regime should, where applicable, follow the guidance of C753, The SuDS Manual.

Appendix A - Site Photographs



Internal Manhole Benching



Internal Manhole Benching



Flow Control Manhole Benching



Internal Manhole Benching



Internal Manhole Benching



Internal Manhole Benching

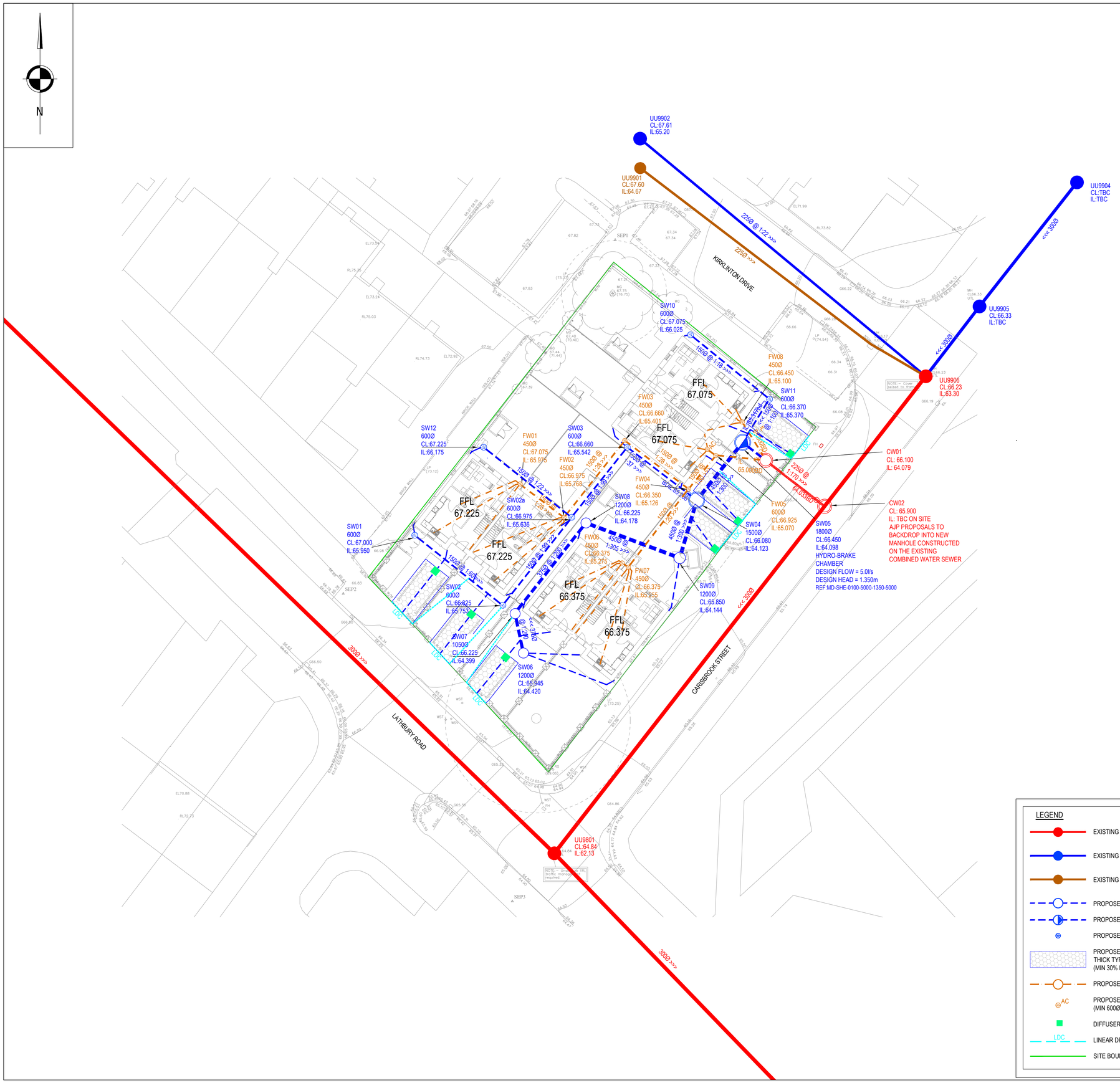


Internal Manhole Benching



Installation of Porous Driveways

Appendix B - Drainage Drawings



GENERAL NOTES

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9. WHERE "ULTRA RIB" UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION. A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES.
10. TRENCH BACKFILL IN HIGHWAYS / CAR PARKS TO WITHIN 1M OF HIGHWAY SHALL BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 3.3.4. BACKFILL MATERIAL IN OTHER AREAS SHALL BE SELECTED EXCAVATED MATERIAL FREE FROM STONES LARGER THAN 40MM, LUMPS OF CLAY OVER 100MM, TIMBER, FROZEN MATERIAL OR VEGETABLE MATTER.
11. UPVC PIPES AND FITTINGS SHALL COMPLY WITH WIS 4-35-01. CLAY PIPES AND FITTINGS SHALL BE EXTRA STRENGTH TO BSEN 295 AND BS 65. CONCRETE PIPES AND FITTINGS SHALL COMPLY WITH BS 5911 , PIPES SHALL BE CLASS H.
12. A CLASS S BED MUST BE PROVIDED TO UPVC PIPES , A CLASS B BED MAY BE USED FOR V.C. AND CONCRETE PIPES.
13. BACKFILL TO DRAINAGE TRENCHES ABOVE PIPE BEDDING AND SURROUND WITHIN ROAD AND CAR PARK AREAS TO BE GRANULAR FILL COMPLYING WITH CLASS 6F2 OR DOT TYPE 1 OR QUARRY SCALPING GRADED FROM 75mm DOWN.
14. A CONCRETE SURROUND IS NOT NORMALLY REQUIRED TO MANHOLES UNLESS INSTALLED IN AREAS OF UNSTABLE GROUND, UNDER CONDITIONS OF FLOATATION OR WHERE SUBJECTED TO EXCEPTIONAL OR ECCENTRIC LOADS, IN WHICH CASE A 150mm SURROUND OF AT LEAST 20N/mm2 CONCRETE SHOULD BE PROVIDED. ANY JOINTS SHOULD BE STAGGERED WITH THE PRECAST CONCRETE JOINTS.
15. DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON TO BS EN 1247-2 MANHOLE STEPS. STEP IRONS AT 300ctrs. HORIZONTALLY & VERTICALLY MAY BE USED AS AN ALTERNATIVE TO DOUBLE STEPS.
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DRAINAGE NOTES

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- EXISTING UNITED UTILITIES COMBINED WATER SEWER
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- EXISTING UNITED UTILITIES FOUL WATER SEWER
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SURFACE WATER FLOW CONTROL CHAMBER
- PROPOSED SURFACE WATER PPIC
- PROPOSED POROUS PARKING BAYS WITH MINIMUM 350mm THICK TYPE 3 POROUS SUB-BASE MATERIAL (MIN 30% POROSITY)
- PROPOSED FOUL WATER DRAINAGE
- AC — PROPOSED FOUL WATER ACCESS CHAMBER (MIN 600Ø - 0.850m DEEP)
- DIFFUSER BOX LOCATION
- LDC — LINEAR DRAINAGE CHANNEL
- SITE BOUNDARY

REV	DATE	DESCRIPTION	BY	CHK	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

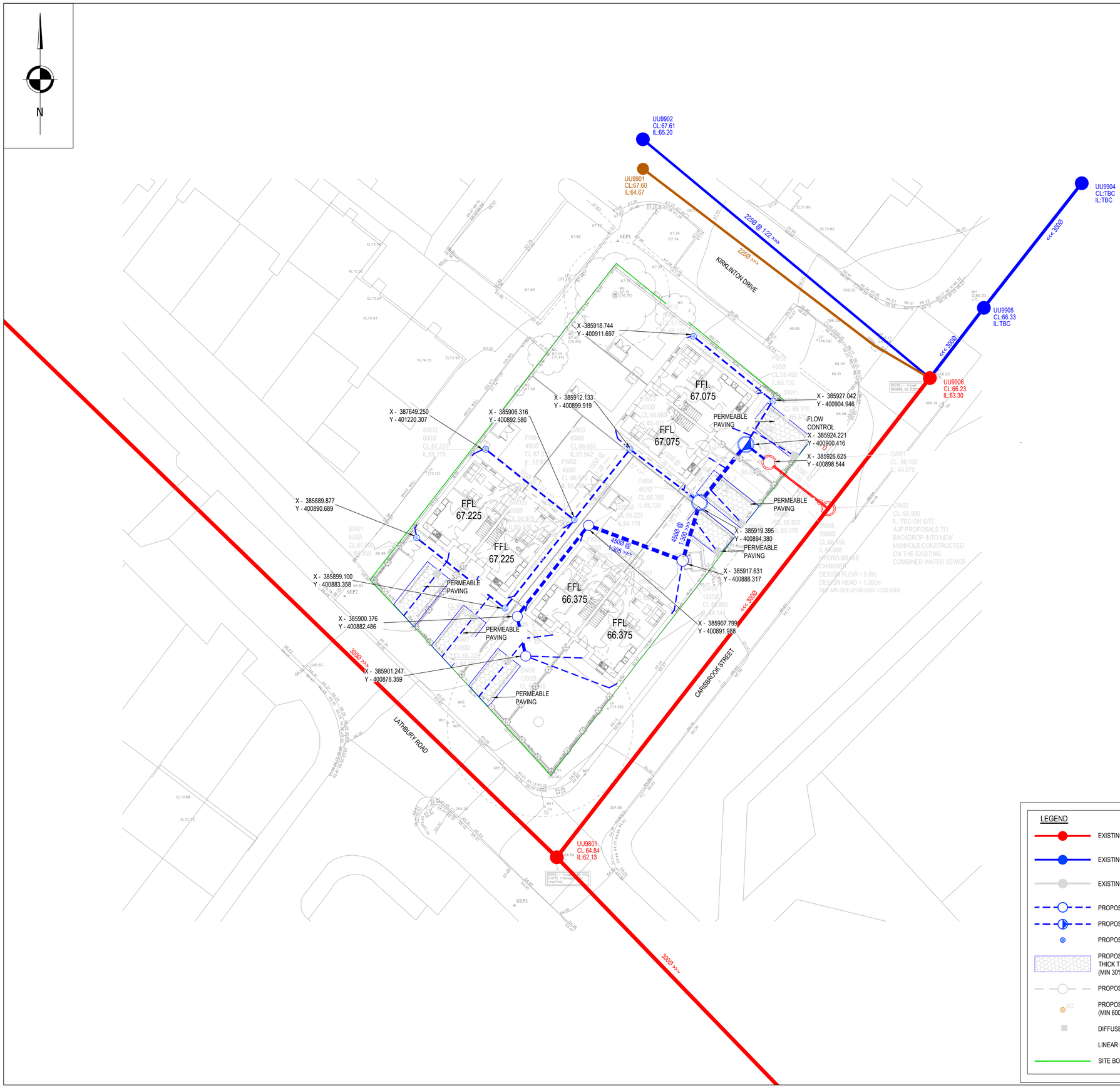
PROJECT: P500 MOSTON
LATHBURY ROAD

TITLE: PROPOSED DRAINAGE LAYOUT

STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	222-100	LRM - AJP -	ZZ -	00 -	DR -	C - 0900			AB

SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1 : 200	JP	JJR	KOB	KOB	JUN 23

AJP consulting engineers est. 1975
0151 227 1462 info@ajpltd.co.uk 91 Dale Street, Liverpool, L2 2ET



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AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

PROJECT: P500 MOSTON
LATHBURY ROAD

TITLE: DRAINAGE CO-ORDINATION LAYOUT

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Manhole Number	Cover Level	Connections	Pipe				Manhole Size	Types	
Coordinates	Depth To Soffit		Code	Inverts	Dimensions (mm)			Manhole	Cover
SW1	67.000		0	1.000	65.950	150	600	PPIC	600x600
E. 385889.867	0.900								
N. 400890.697									
SW2	66.825		1	1.000	65.753	150	600	PPIC	600x600
E. 385899.100	0.900		0	1.001	65.753	150			
N. 400883.358									
SW3	66.660		1	1.001	65.542	150	600	PPIC	600x600
E. 385912.133	0.947		0	1.002	65.542	150			
N. 400899.919									
SW4	66.080		1	1.002	65.296bd	150	1500	C	600x600
E. 385919.395	0.634		2	4.001	64.123	450			
N. 400894.380			0	1.003	64.123	450			
SW5	REFER TO DRAWING LRM-AJP-XX-00-DR-C-1090 FOR FURTHER HYDROBRAKE DETAILS								
E. 385924.221									
N. 400900.416									
SW6	65.500		0	3.000	64.450	375	1200	C	600x600
E. 385907.849	0.675								
N. 400874.738									
SW7	66.225		1	3.000	64.399	375	1050	B	600x600
E. 385900.376	1.421		0	3.001	64.399	375			
N. 400882.486									
SW8	66.225		1	3.001	64.338	375	1200	B	600x600
E. 385907.799	1.597		0	3.002	64.178	450			
N. 400891.988									
SW9	65.850		1	3.002	64.144	450	1200	C	600x600
E. 385917.631	1.256		0	3.003	64.144	450			
N. 400888.317									
SW10	67.075		0	3.001	66.025	150	600	PPIC	600x600
E. 385917.581	0.900								
N. 400912.404									
SW11	66.370		1	3.001	65.370	300	600	PPIC	600x600
E. 385926.875	0.850		0	3.002	65.370	450			
N. 400905.046									
SW12	67.225		0	4.000	66.175	150	600	PPIC	600x600
E. 385897.083	0.900								
N. 400899.919									
SW02a	66.975		1	4.001	65.636	150	600	PPIC	600x600
E. 385906.316	0.850		2	1.001	65.636	150			
N. 400892.580			0	1.002	65.636	150			

Manhole Number	Cover Level	Connections	Pipe				Manhole Size	Types	
Coordinates	Depth To Soffit		Code	Inverts	Dimensions (mm)			Manhole	Cover
FW1	67.075		0	1.000	65.975	150	450	PPIC	600x600
E. 385900.909	0.950								
N. 400896.079									
FW2	66.975		1	1.000	65.768	150	450	PPIC	600x600
E. 385905.495	1.057		0	1.001	65.768	150			
N. 400892.554									
FW3	66.660		1	1.001	65.401	150	450	PPIC	600x600
E. 385911.868	1.109		0	1.002	65.401	150			
N. 400900.625									
FW4	66.350		1	1.002	65.126	150	450	PPIC	600x600
E. 385918.549	1.074		2	2.001	65.126	150			
N. 400895.534			0	1.003	65.126	150			
FW5	66.925		1	1.003	65.070	150	450	PPIC	600x600
E. 385921.408	1.705		0	1.004	65.070	150			
N. 400899.038									
FW6	66.375		0	2.000	65.275	150	450	PPIC	600x600
E. 385911.591	0.950								
N. 400887.799									
FW7	66.375		1	2.000	65.255	150	450	PPIC	600x600
E. 385912.235	0.970		0	2.001	65.255	150			
N. 400887.334									
FW8	66.450		0	3.000	65.100	150	450	PPIC	600x600
E. 385924.175	1.200								
N. 400902.565									
CW01	66.100		1	1.004	65.000	150	1200	C	600x600
E. 385926.625	0.950		2	1.004	64.079	225			
N. 400898.544			3	3.000	65.000	150			
			0	1.005	64.079	225			
CW02	66.450		1	1.005	64.033bd	225	1200	C	600x600
E. 385924.175	1.200								
N. 400902.565			0	1.006	TBC	225			

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REV	DATE	DESCRIPTION	BY	CHK	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

PROJECT: P500 MOSTON LATHBURY ROAD

TITLE: MANHOLE SCHEDULES

STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	222-100	LRM -	AJP -	ZZ -	00 -	DR -		**C - 1010**	**AB**

SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
NTS	JPR	JPR	KOB	KOB	JAN 2025

AJP consulting engineers
EST. 1979
0151 227 1462 info@ajpltd.co.uk 1 Dale Street, Liverpool, L2 2ET



GENERAL NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
2. ALL RELEVANT DIMENSIONS TO BE OBTAINED/CHECKED AGAINST ARCHITECT'S DRAWINGS AND BY SITE MEASUREMENT PRIOR TO THE COMMENCEMENT OF WORKS OR ORDERING OF MATERIALS. DISCREPANCIES BETWEEN THE DRAWINGS AND SITE CONDITIONS TO BE NOTIFIED TO THE ENGINEER.
3. DO NOT SCALE FROM THIS DRAWING.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION OF ALL UNDERGROUND SERVICES THAT MAY EXIST AND TO DIVERT THEM IF NECESSARY PRIOR TO THE COMMENCEMENT OF THE WORKS.
5. MATERIALS OR WORKMANSHIP NOT COMPLYING WITH THE ENGINEERS DRAWINGS AND SPECIFICATION SHALL BE DEEMED UNACCEPTABLE AND REMOVED FROM SITE AND REPLACED WITH WORK CORRECTLY MANUFACTURED, DELIVERED AND ERECTED.
6. ALL EXISTING INVERT LEVELS TO BE CHECKED BY THE CONTRACTOR AT THE START OF WORKS AND ANY OTHER DISCREPANCIES NOTIFIED TO THE ENGINEER. ALL LEVELS ARE BASED ON TOPOGRAPHICAL SURVEY INFORMATION PROVIDED BY OTHERS.
7. ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE INSPECTED BY L.A., NHBC OR UNITED UTILITIES AS APPLICABLE.
8. ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS 3 CONDITION).
9. WHERE "ULTRA RIB" UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION. A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES.
10. TRENCH BACKFILL IN HIGHWAYS / CAR PARKS TO WITHIN 1M OF HIGHWAY SHALL BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 3.3.4. BACKFILL MATERIAL IN OTHER AREAS SHALL BE SELECTED EXCAVATED MATERIAL FREE FROM STONES LARGER THAN 40MM, LUMPS OF CLAY OVER 100MM, TIMBER, FROZEN MATERIAL OR VEGETABLE MATTER.
11. UPVC PIPES AND FITTINGS SHALL COMPLY WITH WIS 4-35-01. CLAY PIPES AND FITTINGS SHALL BE EXTRA STRENGTH TO BSEN 295 AND BS 65. CONCRETE PIPES AND FITTINGS SHALL COMPLY WITH BS 5911 , PIPES SHALL BE CLASS H.
12. A CLASS S BED MUST BE PROVIDED TO UPVC PIPES , A CLASS B BED MAY BE USED FOR V.C. AND CONCRETE PIPES.
13. BACKFILL TO DRAINAGE TRENCHES ABOVE PIPE BEDDING AND SURROUND WITHIN ROAD AND CAR PARK AREAS TO BE GRANULAR FILL COMPLYING WITH CLASS 6F2 OR DOT TYPE 1 OR QUARRY SCALPING GRADED FROM 75mm DOWN.
14. A CONCRETE SURROUND IS NOT NORMALLY REQUIRED TO MANHOLES UNLESS INSTALLED IN AREAS OF UNSTABLE GROUND, UNDER CONDITIONS OF FLOATATION OR WHERE SUBJECTED TO EXCEPTIONAL OR ECCENTRIC LOADS, IN WHICH CASE A 150mm SURROUND OF AT LEAST 20N/mm2 CONCRETE SHOULD BE PROVIDED. ANY JOINTS SHOULD BE STAGGERED WITH THE PRECAST CONCRETE JOINTS.
15. DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON TO BS EN 1247-2 MANHOLE STEPS. STEP IRONS AT 300ctrs. HORIZONTALLY & VERTICALLY MAY BE USED AS AN ALTERNATIVE TO DOUBLE STEPS.
16. ALL WORK TO BE IN ACCORDANCE WITH "SEWERS FOR ADOPTION SEVENTH EDITION" AND UNITED UTILITIES WATER PLC's STANDARD CONSTRUCTION DETAILS.
17. TOP OF FOUNDATIONS ARE TO BE A MIN 750mm FROM FINISHED EXTERNAL LEVELS.
18. FOUNDATIONS WITHIN CLOSE PROXIMITY TO PROPOSED DRAINAGE WILL NEED TO BE AT THE SAME DEPTH AS DRAINAGE TO AVOID THE POTENTIAL FOR UNDERMINING.

DRAINAGE NOTES

- FOUL AND SURFACE WATER CONNECTIONS ARE TO BE CONFIRMED
- ALL POP-UP SETTING OUT IS TO BE PROVIDED BY THE ARCHITECT

SECONDARY ROUTE OF FLOOD WATERS IN EXCEEDENCE OF DESIGN EVENTS FROM LOCALISED BLOCKAGES

LOCATION OF MOST LIKELY FLOODING EVENT IN THE CASE OF STORM EVENTS BEYOND THE REQUIRED DESIGN PARAMETERS

REV	DATE	DESCRIPTION	BY	CHK	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

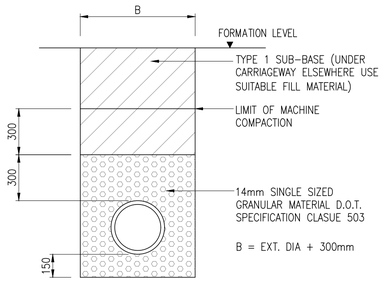
PROJECT: P500 MOSTON LATHBURY ROAD

TITLE: FLOOD ROUTING PLAN

STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	222-100	LRM - AJP	-ZZ	- 00	-DR	- C - 1020			AB

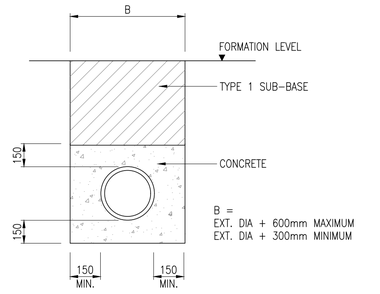
SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1 : 200	JPR	JPR	KOB	KOB	NOV 24

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est. 1975
0151 227 1462 info@ajpltd.co.uk 91 Dale Street, Liverpool, L2 2ET



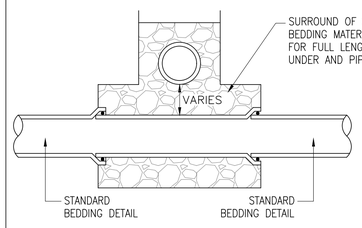
CLASS 'S' BEDDING DETAIL

TYPE 'S' BEDDING TO BE USED FOR PIPES GENERALLY IN FOOTWAY AND LANDSCAPED AREAS, AND FOR PIPES UNDER TRAFFICKED AREAS WITH MORE THAN 1.2m COVER



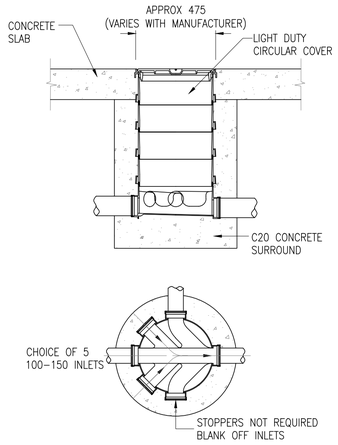
DETAIL OF CLASS 'Z' CONCRETE SURROUND

(FOR PIPES UNDER TRAFFICKED AREAS WITH <1.2m COVER)

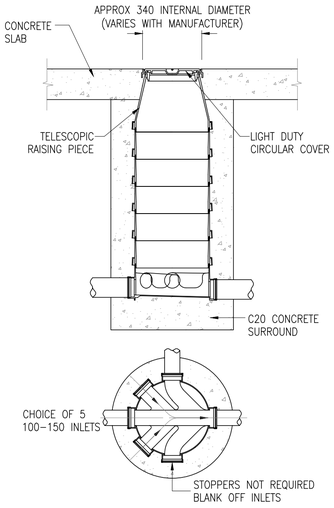


PIPE CROSSINGS OVER

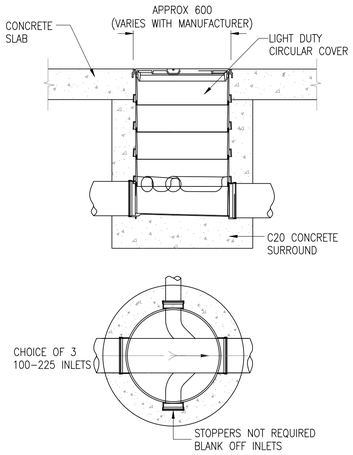
STANDARD MIX	GRADE OF CONCRETE	APPLICATIONS
ST1	C7.5	FILLINGS, BLINDINGS, SOFT SPOTS AND DRAINAGE SUMPS
ST4	C20	ALL OTHER APPLICATIONS



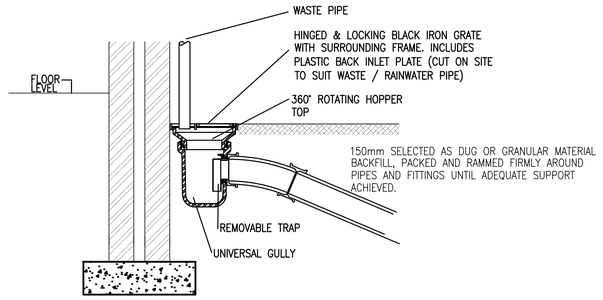
POLYPROPYLENE INSPECTION CHAMBER DETIALS



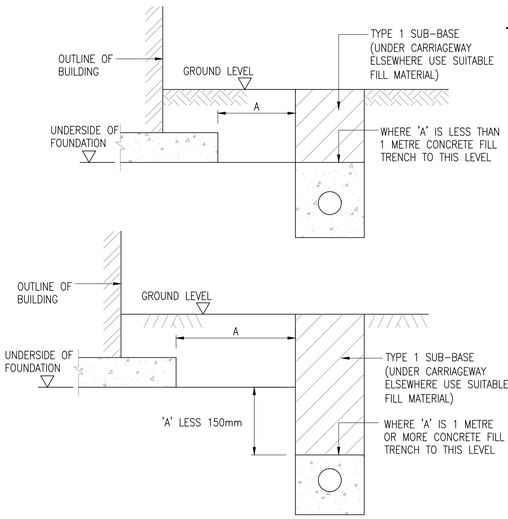
REDUCED ACCESS INSPECTION CHAMBER DETIALS (DEPTH 1.1m < 3m)



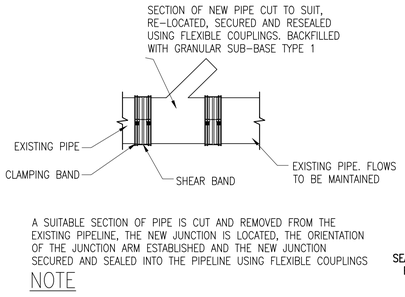
POLYPROPYLENE INSPECTION CHAMBER DETIALS – 600mmø FOR PIPES > 150mmø



DIRECT RAINWATER CONNECTION



TRENCH DETAIL FOR FW AND SW PIPE RUNS NEAR BUILDING FOUNDATIONS

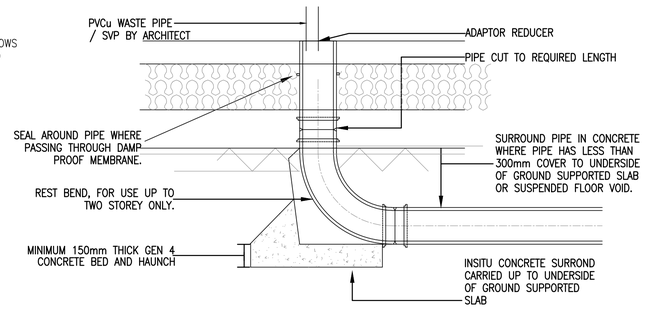


A SUITABLE SECTION OF PIPE IS CUT AND REMOVED FROM THE EXISTING PIPELINE, THE NEW JUNCTION IS LOCATED, THE ORIENTATION OF THE JUNCTION ARM ESTABLISHED AND THE NEW JUNCTION SECURED AND SEALED INTO THE PIPELINE USING FLEXIBLE COUPLINGS

NOTE

1. THE REPLACEMENT PIPE OR JUNCTION SHOULD LEAVE A TOTAL LENGTH OF 20MM LESS THAN THAT BETWEEN THE CUT ENDS OF THE EXISTING PIPELINE.
2. COUPLINGS SHOULD BE TIGHTENED EITHER STARTING WITH THE SHEAR BAND FOLLOWED BY THE CLAMPING BANDS OR WORKING ACROSS THE COUPLINGS FROM ONE OF THE CLAMPING BANDS.
3. IT IS IMPORTANT TO ENSURE THAT THE ENDS OF THE PIPES ARE CUT SQUARE AND THAT THERE IS SUFFICIENT CLEARANCE BETWEEN THE ENDS OF THE PIPES TO ALLOW FLEXIBLE MOVEMENT TO TAKE PLACE.

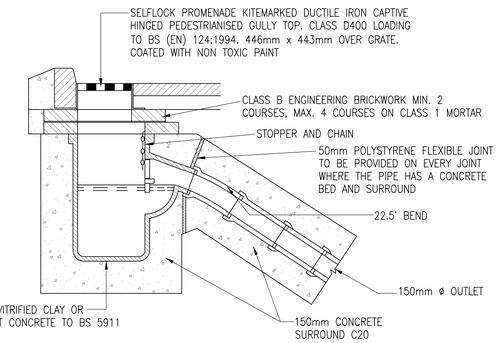
JUNCTION INSERTION



TYPICAL DRAIN CONNECTION

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN. SETTING OUT SHALL BE UNDERTAKEN USING ONLY THE INFORMATION GIVEN. DISTANCES SHOULD NOT BE SCALED FROM THIS DRAWING
2. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 'SEWERS FOR ADOPTION' 6TH EDITION
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4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION GIVEN WITH REGARDS TO EXISTING SERVICES AND DRAINAGE CONNECTIONS ETC. PRIOR TO COMMENCING THE WORKS. THE RATES SHALL INCLUDE FOR HAND DIG AROUND SERVICES WHERE NECESSARY. THE CONTRACTOR SHALL ADHERE TO THE CDM REGULATIONS AT ALL TIMES
5. THE OUTSIDES OF ALL SEWERS SHALL BE A MINIMUM OF 1.0m FROM KERB LINES AND THE OUTSIDE OF MANHOLES SHALL BE A MINIMUM OF 0.5m FROM KERB LINES
6. EXISTING FLOWS IN WATERCOURSES, SEWERS AND LAND DRAINS SHALL BE MAINTAINED AT ALL TIMES
7. ONLY TRAINED PERSONNEL SHALL BE PERMITTED TO ENTER CONFINED SPACES
8. ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS
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16. DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON TO BS EN 1247-2 MANHOLE STEPS. STEP IRONS AT 300ctrs. HORIZONTALLY & VERTICALLY MAY BE USED AS AN ALTERNATIVE TO DOUBLE STEPS.

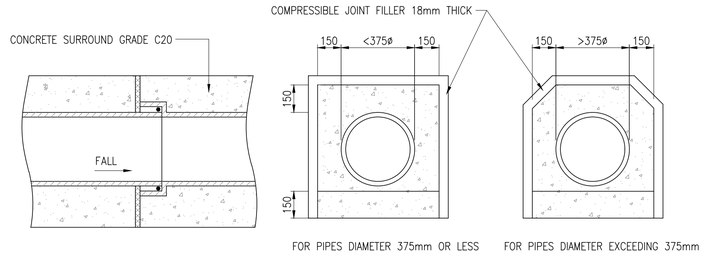


GULLY GRATING AND FRAME TO BS EN 124 CLASS D (40 TONS)

SIZE OF GULLY (mm)	GULLY FRAME		
	MIN.WIDTH	MIN.AREA OF WATERWAY	MIN.DEPTH OF FRAME
450x900 DEEP	450mm	900cm²	75mm

NOTES
1. GULLY, GRATING AND FRAME TO COMPLY WITH BS EN 124
2. BACKFILL TO GULLY CONNECTIONS BELOW FORMATION IN CARRIAGEWAYS SHALL BE TYPE 1 SUB-BASE MATERIAL. WHERE MECHANICAL COMPACTION IS IMPRACTICAL THE BACKFILLING SHALL BE GRADE C10P/20 CONCRETE.
3. GULLY GRATING AND FRAME TO BE HINGED TYPE.

TYPICAL ROAD GULLY DETAIL



DETAILS OF FLEXIBLE JOINT FOR PIPES WITH CONCRETE SURROUND (150mm THICK) PROVIDED AT EACH PIPE JOINT

REV	DATE	DESCRIPTION	BY	CHK	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

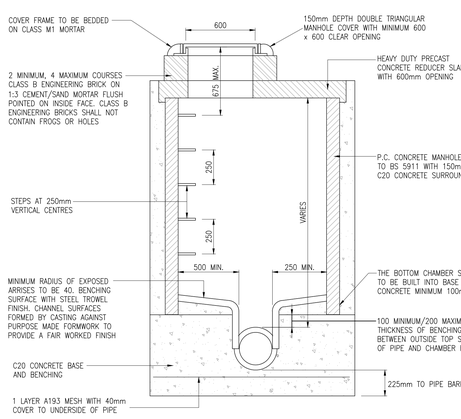
PROJECT: P500 MOSTON KENYON LANE

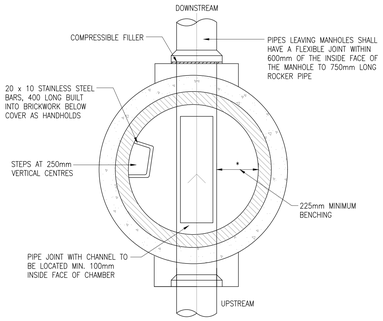
TITLE: TYPICAL DRAINAGE DETAILS SHEET 1 OF 2

STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL	SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	222-100	LRM - AJP - XX - 00 - DR - C - 1060								AB

SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1:20	JPR	JPR	KOB	KOB	FEB 2025

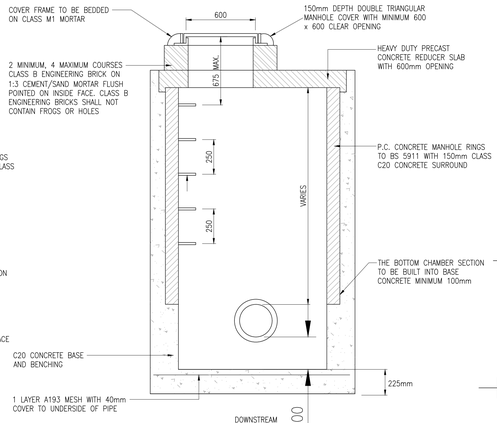
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0151 227 1462 info@ajpltd.co.uk 91 Dale Street, Liverpool, L2 2ET

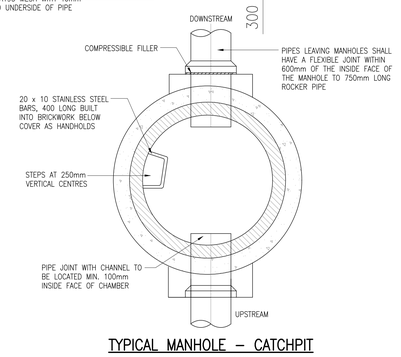




TYPICAL MANHOLE TYPE B

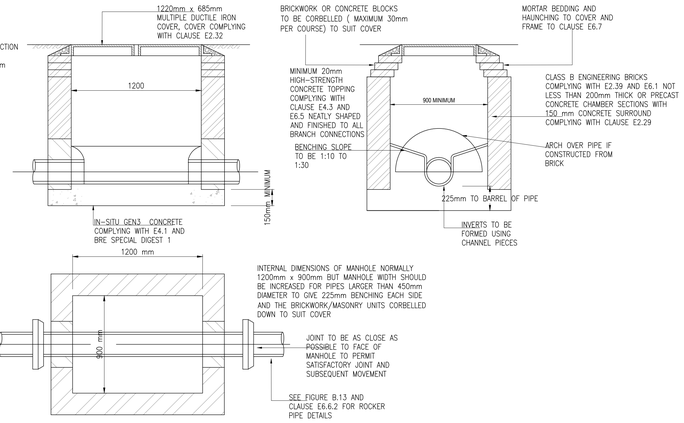
(MAX. DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 3.0m)





TYPICAL MANHOLE – CATCHPIT

(MAX. DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE 3.0m)

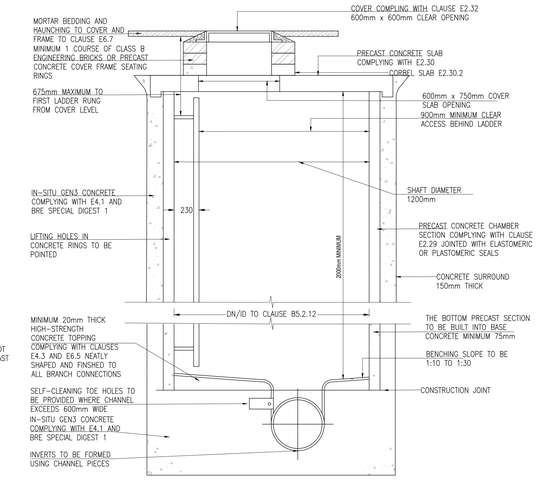


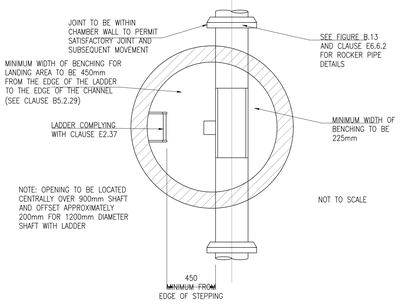
NOTE: THE USE OF PRECAST CONCRETE CHAMBER UNITS TO E2.29 WITH 150mm GEN 3 IN-SITU CONCRETE COMPLYING WITH E4.1 AND BRE SPECIAL DIGEST 1 IN PLACE OF BRICKWORK CONSTRUCTION IS PERMITTED

NOT TO SCALE

TYPICAL MANHOLE DETAIL – TYPE C

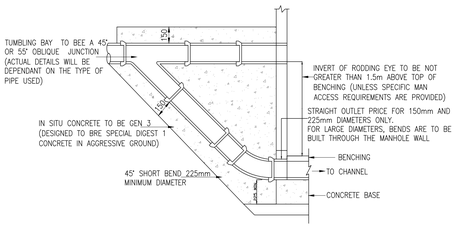
(DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE LESS THAN 1.5m MAXIMUM PIPE SIZE 450mm DIAMETER RIGID MATERIAL CONSTRUCTION)





TYPICAL MANHOLE DETAIL – TYPE A2

(DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3m TO 6m WITH LADDER ALTERNATIVE RIGID MATERIAL CONSTRUCTION WITH CONCRETE SURROUND)



EXTERNAL RAMPED BACKDROP

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN. SETTING OUT SHALL BE UNDERTAKEN USING ONLY THE INFORMATION GIVEN. DISTANCES SHOULD NOT BE SCALED FROM THIS DRAWING
2. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH 'SEWERS FOR ADOPTION 6TH EDITION
3. ALL EXISTING INVERT LEVELS TO BE CHECKED BY THE CONTRACTOR AT THE START OF WORKS AND ANY OTHER DISCREPANCIES NOTIFIED TO THE ENGINEER. ALL LEVELS ARE BASED ON TOPOGRAPHICAL SURVEY INFORMATION PROVIDED BY OTHERS.
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6. EXISTING FLOWS IN WATERCOURSES, SEWERS AND LAND DRAINS SHALL BE MAINTAINED AT ALL TIMES
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8. ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS
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10. WHERE "ULTRA RIB" UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION. A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES.
11. TRENCH BACKFILL IN HIGHWAYS / CAR PARKS TO WITHIN 1M OF HIGHWAY SHALL BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 3.3.4. BACKFILL MATERIAL IN OTHER AREAS SHALL BE SELECTED EXCAVATED MATERIAL FREE FROM STONES LARGER THAN 40MM, LUMPS OF CLAY OVER 100MM, TIMBER, FROZEN MATERIAL OR VEGETABLE MATTER.
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16. DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON TO BS EN 1247-2 MANHOLE STEPS. STEP IRONS AT 300cts. HORIZONTALLY & VERTICALLY MAY BE USED AS AN ALTERNATIVE TO DOUBLE STEPS.

REV	DATE	DESCRIPTION	BY	CHK	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

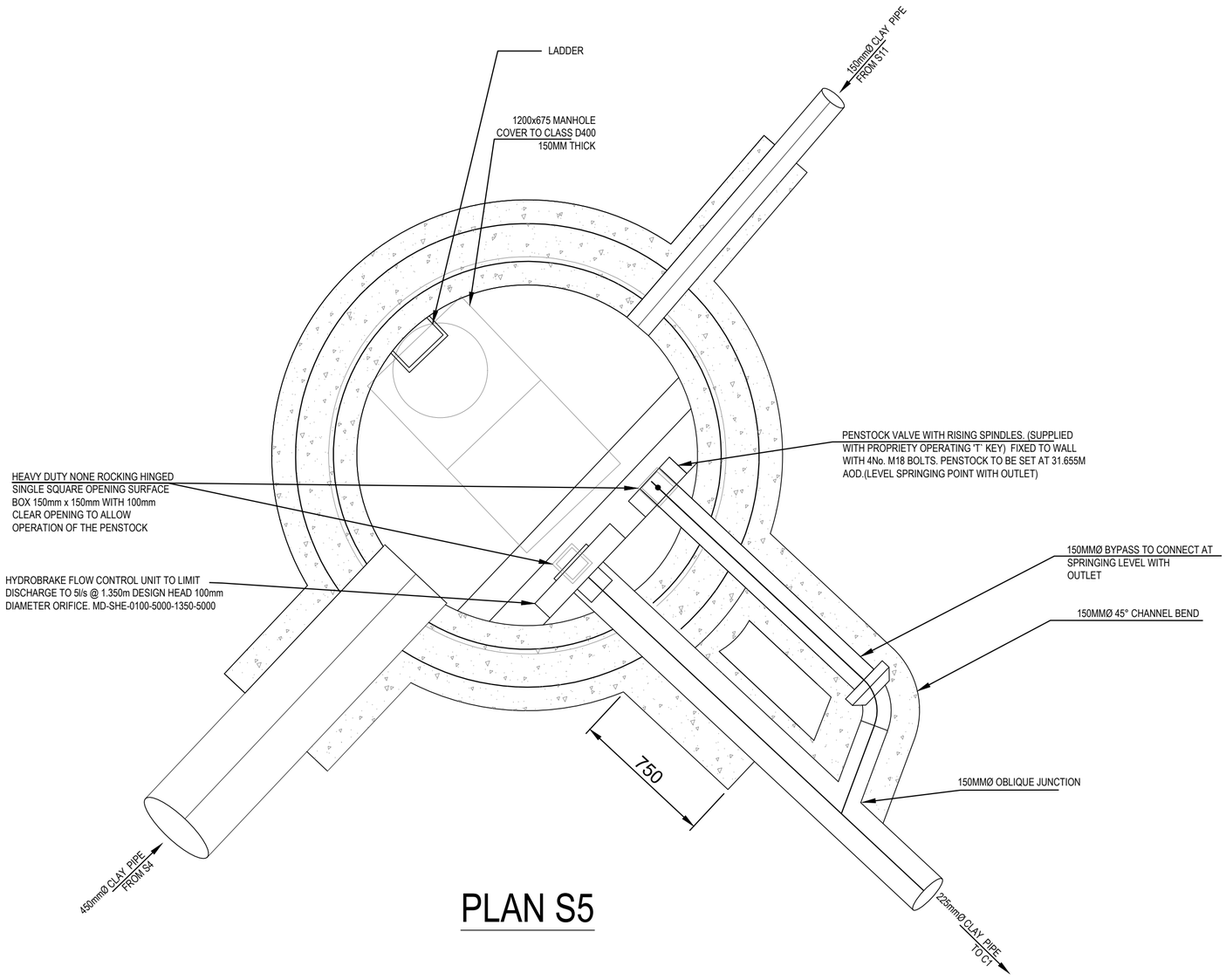
PROJECT: P500 MOSTON KENYON LANE

TITLE: TYPICAL DRAINAGE DETAILS SHEET 2 OF 2

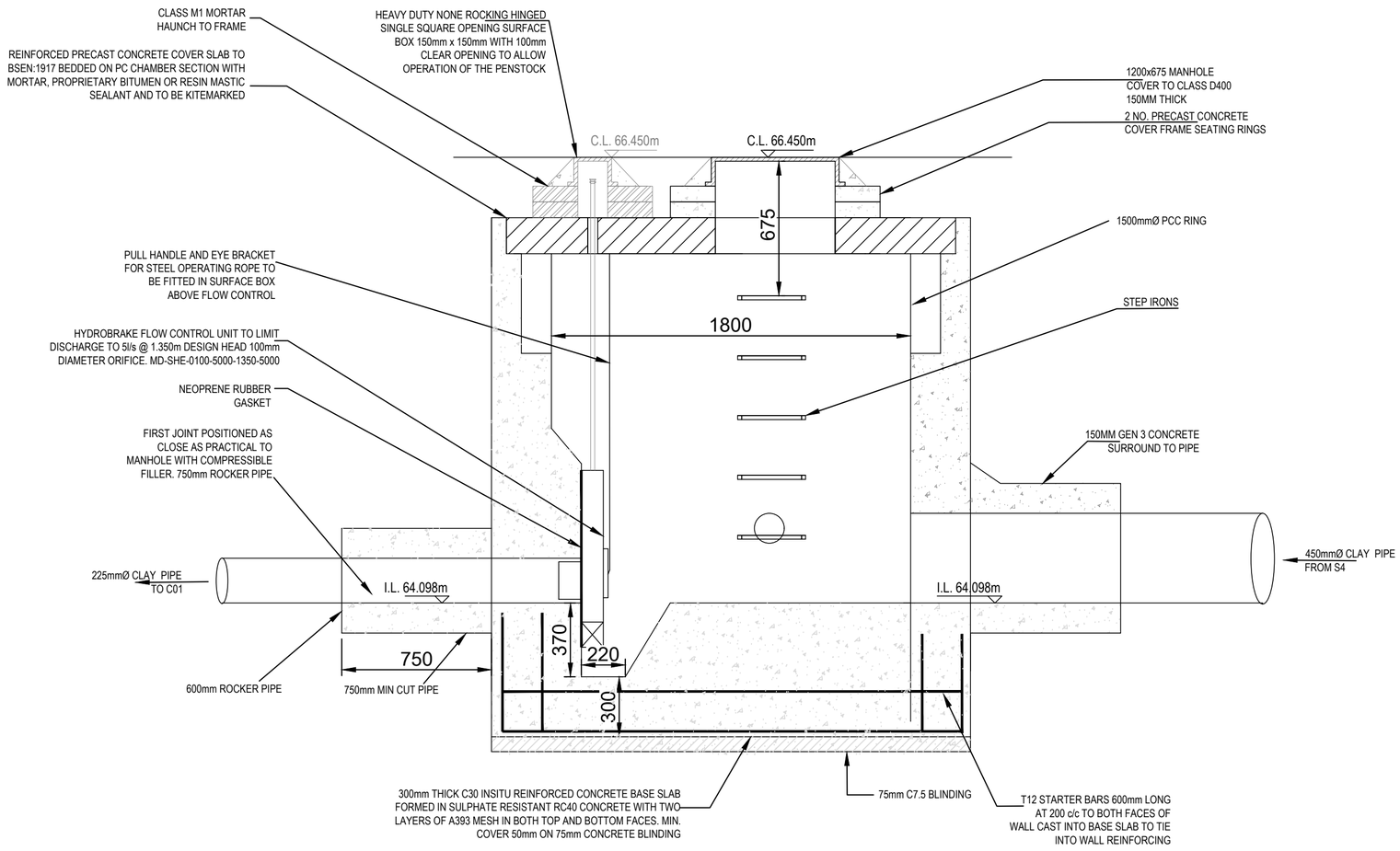
STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV.
S2	222-100	LRM -	AJP -	XX -	00 -	DR -		C - 1061	AB

SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1:20	JPR	JPR	KOB	KOB	FEB 2025

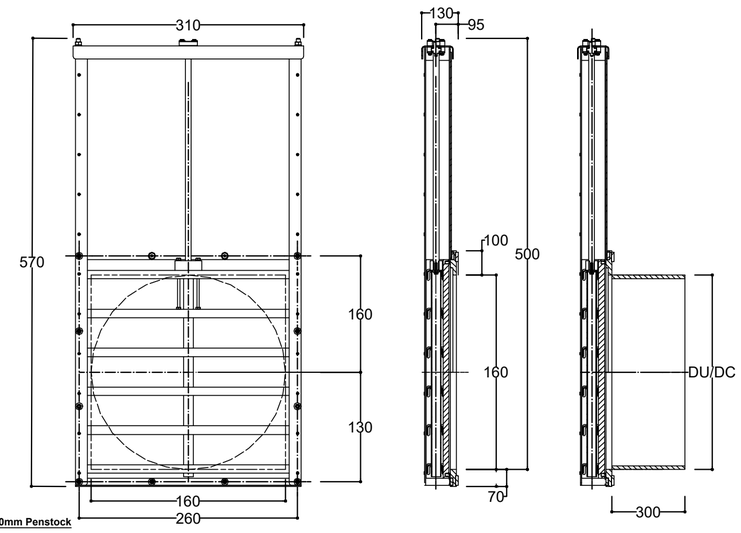
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PLAN S5



SECTION S5



Althon KSA-MD 150mm Penstock

Manufactured by: KWT Waterbeheersing
Materials: HDPE, SS316, EPDM and POM
Standard Culvert: Ø 160mm
Working Pressure: 5 MwC on/off seating
The penstock is supplied with a non-rising spindle as standard. It has an OLG spindle bearing and an HDPE back plate.It has an HDPE moving plate provided with RVS316L stiffeners with a POM spindle block. The mounting material and the spindle are made of SS316. The seal between the moving and back plate consists of an integral EPDM lip seal, which does not require any adjusment after installaiton.

PLEASE NOTE THIS DRAWING IS NOT TO SCALE AND SHOULD ONLY BE USED AS A VISUAL REPRESENTATION

All dimensions shown in mm.

PENSTOCK DETAIL NTS

GENERAL NOTES

1. SETTING OUT SHALL BE UNDERTAKEN USING ONLY THE INFORMATION GIVEN. DISTANCES SHOULD NOT BE SCALED FROM THIS DRAWING.
2. ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION 6TH EDITION AND UNITED UTILITIES DETAILS & GUIDELINES.
3. THE MINIMUM GRAVITY PIPE DIAMETER UNDER ADOPTABLE HIGHWAYS SHALL BE 150MM
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION GIVEN WITH REGARDS TO EXISTING SERVICES AND DRAINAGE CONNECTIONS ETC. PRIOR TO COMMENCING THE WORKS. THE RATES SHALL INCLUDE FOR HAND DIG AROUND SERVICES WHERE NECESSARY. THE CONTRACTOR SHALL ADHERE TO THE CDM REGULATIONS AT ALL TIMES
5. THE OUTSIDES OF ALL SEWERS SHALL BE A MINIMUM OF 1.0M FROM KERB LINES AND THE OUTSIDE OF MANHOLES SHALL BE A MINIMUM OF 0.5M FROM KERB LINES
6. EXISTING FLOWS IN WATERCOURSES, SEWERS AND LAND DRAINS SHALL BE MAINTAINED AT ALL TIMES 7. ONLY TRAINED PERSONNEL SHALL BE PERMITTED TO ENTER CONFINED SPACES
7. ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS
8. ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE INSPECTED BY LA HWAY OR THE NETWORK OPERATOR AS APPLICABLE
9. JOINTING SHALL BE CARRIED OUT IN ACCORDANCE WITH APPROVED AND AGED LA HIGHWAYS DRAWINGS. THE SPIRAL ORIB SHALL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION.
10. A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES. TRENCH BACKFILL IN HIGHWAYS TO WITHIN 1M OF HIGHWAY SHALL, AS DIRECTED BY THE HIGHWAY AUTHORITY BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 4.3.4. 12. SLAB LEVELS SHALL NOT BE VARIED WITHOUT REFERENCE TO THE ENGINEER FOR GUIDANCE
11. DOMESTIC DRAINAGE SHALL BE TO BUILDING REGULATIONS APPROVED DOCUMENT H. 110MM U.P.V.C. PIPES LAID TO THE FOLLOWING MINIMUM FALLS UNLESS OTHERWISE SHOWN.

	FOUL	S.W.
HEAD RUN	1 IN 40	1 IN 60
ELSEWHERE	1 IN 80	1 IN 100

12. POLYPROPYLENE INSPECTION CHAMBERS TO BE PROVIDED TO ALL PRIVATE DRAINAGE LESS THAN 1.10m DEEP. WHERE PRIVATE DRAINAGE RUNS ARE DEEPER THAN 1.10m, REDUCED ACCESS CHAMBERS TO BE PROVIDED.
13. ALL LATERAL CONNECTIONS WILL BE MADE AT SOFFIT LEVEL TO THE MAIN CHANNEL.
14. REFER TO UU - STND-19-010 FOR APPROPRIATE ROCKER PIPE LENGTHS

REV	DATE	DESCRIPTION	BY	CHK	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB	KOB

DRAWING STATUS: **AS BUILT**

CLIENT: JIGSAW

ARCHITECT: BTP ARCHITECTS

PROJECT: P500 MOSTON
LATHBURY ROAD

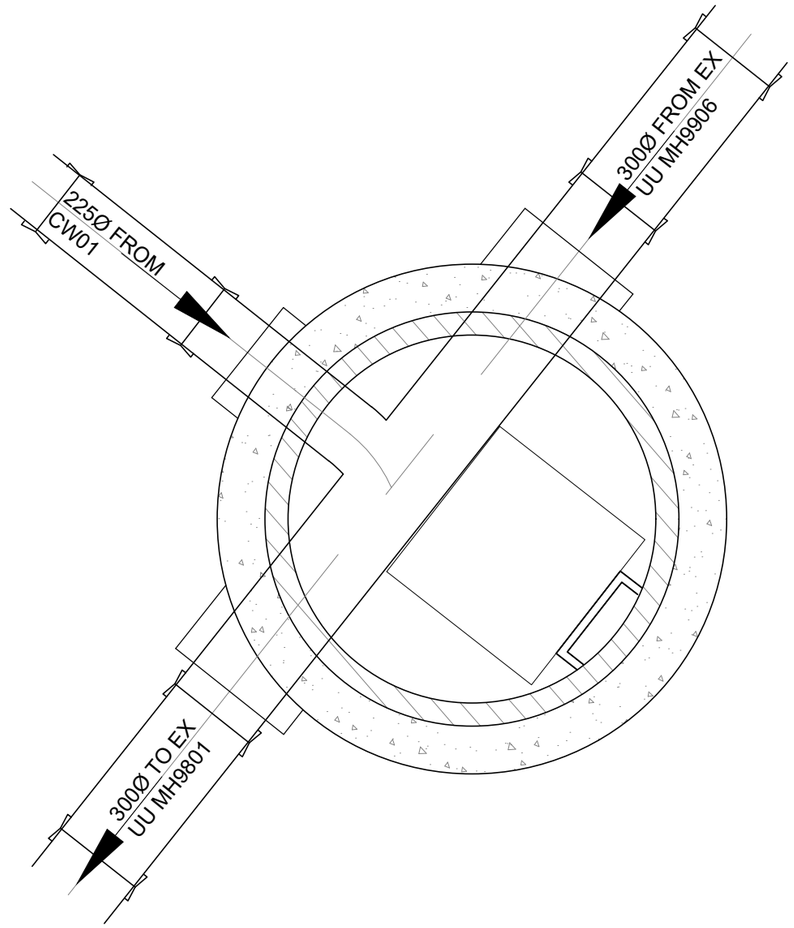
TITLE: HYDROBRAKE DETAILS

STATUS:	PROJECT No.	PROJECT	ORIGINATOR	VOL/SYS	LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	222-100	LRM	AJP	ZZ	00	DR	C	1090	AB

SCALE @ A1:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1 : 20	JPR	JPR	KOB	KOB	OCT 24

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MANHOLE REF	CW02	
MANHOLE DIAMETER (mm)	1200	
COVER LEVEL (m)	65.900	
PIPE Ø (mm) | INVERT LEVEL (m)	300	TBC
	225	64.033
	-	-
	-	-
MANHOLE TYPE	TYPE B	
DEPTH TO SOFFIT (m)	TBC	
DEPTH TO CUT-OUT RECESS	N/A	
COVER SIZE (mm)	600 x 600	
COVER DEPTH (mm)	150	
COVER SPEC	D400	
HOLE SIZE IN COVER SLAB	600 x 600 E.O.	
LADDER OR DOUBLE STEPS?	DOUBLE STEPS	
SAFETY CHAIN	NO	
SAFETY RAILS	NO	
INVERT ACCESS STEPS	NO	
ROCKER PIPE LENGTH (mm)	600	
MINIMUM BENCHING WIDTH (mm)	600	
EASTING	385932.801	
NORTHING	400893.735	



REV	DATE	DESCRIPTION	BY	APP
AB	01.06.2026	AS BUILT BASED ON LAST CONSTRUCTION ISSUE	JPR	KOB

PROJECT: LATHBURY ROAD - MANCHESTER

TITLE: S106 S.W MANHOLE SCHEDULE

STATUS:	PROJECT No:	DRAWING No:	REV:
S2	222-100	LRM-AJP-XX-00-DR-C-1100	AB

SCALE @ A3:	DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
1:20	JPR	JPR	KOB	KOB	JAN 25

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