

HEALTH & SAFETY: THE WORKS SHALL BE CARRIED OUT BY SPECIALIST COMPETENT AND EXPERIENCED CONTRACTORS. ALL OPERATIVES SHALL HAVE RECEIVED FULL AND APPROPRIATE TRAINING WITH APPROPRIATE QUALIFICATIONS FOR THE OPERATIONS THEY ARE REQUIRED TO UNDERTAKE. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT HEALTH & SAFETY REGULATIONS.

DRAINAGE NOTES

ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER FOR ACTION PRIOR TO CONSTRUCTION.

ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY AND IN CONJUNCTION WITH ALL RELEVANT BRITISH STANDARDS, CODES OF PRACTICE AND 'DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS' AND ADDENDUMS AS APPROPRIATE.
ALL DRAINAGE SHALL COMPLY WITH THE TYPICAL DRAINAGE CONSTRUCTION DETAILS AND THE REQUIREMENTS OF BS EN 752.

ACCESS COVERS AND FRAMES SHALL COMPLY WITH THE LOADINGS SPECIFIED AND TO BS EN 124 AND KITEMARKED OR IF RECESSED COVERS ARE SPECIFIED THEN IN ACCORDANCE WITH FACTA ASSOCIATION EQUIVALENT.

ALL INTERNAL COVERS TO BE DOUBLE SEALED RECESSED COVERS TO ACCEPT PROPOSED FLOOR FINISHES.

THE PROPOSED BUILDING OUTLINES SHOWN ON THIS DRAWING ARE FOR INFORMATION ONLY. REFER TO ARCHITECTS PLANS FOR SETTING OUT INFORMATION AND DETAILS.

FOR SETTING OUT DIMENSIONS OF SS'S, SVP'S, RWP'S, FLOOR GULLY & OTHER DRAINAGE 'POP UP' LOCATIONS, REFER TO ARCHITECTS OR MECHANICAL & ELECTRICAL ENGINEERS DRAWINGS. LOCATION OF EXTERNAL CHANNEL DRAINS AND GULLY LOCATIONS / REQUIREMENTS TO BE CONFIRMED BY ARCHITECT.
ALL DRAINAGE PIPEWORK SHOWN SHALL BE 100MM DIAMETER FOR FOUL AND 150MM FOR SURFACE WATER UNLESS NOTED OTHERWISE.
ALL DRAINAGE PIPEWORK SHALL BE LAID SOFFIT TO SOFFIT UNLESS NOTED OTHERWISE.

ALL UNDERSLAB DRAINAGE SHALL BE LAID AT GRADIENTS OF 1:80 MIN. FOR FOUL PIPEWORK AND 1:100 MIN. FOR SURFACE WATER UNLESS NOTED OTHERWISE. ALL UNDERSLAB DRAINAGE SHALL BE CLEAR OF FOUNDATIONS UNLESS SHOWN OTHERWISE.
ALL BENDS IN PIPEWORK TO BE AS LARGE A BADIUS AS POSSIBLE (EXCLUDING CONNECTIONS TO CHAMBERS) TO ENSURE FREE FLOW. SHORT RADIUS BENDS TO BE AGREED WITH DRAINAGE ENGINEER.

ALL SURFACE WATER DROP DOWN POSITIONS SHALL HAVE A BEND SET AT INVERT LEVEL NO GREATER THAN 1.3M BELOW FINISH FLOOR LEVEL.

AT LEAST ONE SOIL PIPE AT THE HEAD OF EACH FOUL RUN SHALL BE VENTED TO THE ATMOSPHERE. ALL SVPS, SSS AND RWP DOWNPIPES SHALL BE ACCESSIBLE AT GROUND LEVEL FOR RODDING PURPOSES.

COVER LEVELS SHOWN ON THIS DRAWING ARE APPROXIMATE AND SHALL BE ADJUSTED TO SUIT LEVELS ON SITE BY CONTRACTOR. COVERS SHALL BE ORIENTATED TO SUIT PAVEMENT FINISHES WHERE APPROPRIATE.
ALL COVER LEVELS ARE TO BE CONFIRMED BY THE ARCHITECT

ALL PRIVATE DRAINAGE PIPEWORK FOR FOUL AND SURFACE WATER SYSTEMS HAVE BEEN DESIGNED ON THE BASIS OF UPVC TO BS EN 1401-1, UNLESS NOTED OTHERWISE.

CONCRETE ENCASEMENT OF THE PIPEWORK SHALL BE REQUIRED WHERE VERTICAL CLEARANCE BETWEEN TWO PIPES CROSSING IS LESS THAN 300MM.
WHERE NEW DRAINAGE IS SITUATED WITHIN 5 METRES OF NEW OR EXISTING TREES THE PIPEWORK SHALL BE ENCASED IN CONCRETE TO REDUCE THE RISK OF ROOT INGRESS.

ALL DRAINAGE CONNECTING TO THE PUBLIC SEWER NETWORK SHALL NOT COMMENCE UNTIL RECEIPT OF THE APPROVAL FROM THE DRAINAGE AUTHORITY AND SHALL COMPLY WITH REQUIREMENTS USING VITRIFIED CLAY PIPEWORK TO BS EN 295 WITH PLAIN SLEEVED OR SOCKETED FLEXIBLE JOINTS SUBJECT TO APPROVAL.

WHERE DRAINAGE WORKS ARE CARRIED OUT IN THE PUBLIC HIGHWAY THE RELEVANT NECESSARY APPROVALS AND ROAD OPENING NOTICES SHALL BE OBTAINED FROM THE HIGHWAY AUTHORITY AND UTILITY COMPANIES.

PRIOR TO CONSTRUCTION THE FLOW CONTROL MANUFACTURER'S DRAWING AND HYDRAULIC TABLE SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL

PRIOR TO CONSTRUCTION THE ATTENUATION TANK MANUFACTURER'S DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL

UPON COMPLETION ALL NEW DRAINAGE INSTALLATION TOGETHER WITH ANY EXISTING DRAINAGE RETAINED SHALL BE JETTED AND CCTV SURVEYED UPON COMPLETION. CONTRACTOR TO ENSURE THAT THE DRAINAGE SYSTEM IS FULLY OPERATIONAL, FREE OF EXCESS DEBRIS/SILT AND ALL IDENTIFIED FAULTS RECTIFIED.

Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
2. This drawing should not be scaled.
3. All dimensions are to be verified by the contractor on site.
4. All discrepancies should be reported to the C.A. prior to the commencement of the works.

© CIVIC ENGINEERS LIMITED

Notes and Keys

TOPOGRAPHICAL SURVEY BY SURVEY SOLUTIONS RECEIVED ON: 07.09.22 DRG NO: 41020MCLS-01

ALL DRAINAGE PROPOSALS ARE SUBJECT TO CONFIRMATION OF EXISTING SEWER LEVELS

ALL RWP AND SVP DROPS TO BE CONFIRMED BY ARCHITECT

ALL POP UP REST BENDS ARE SET MIN 450mm BELOW SSL

WHERE POP UPS ARE LOCATED ON PILECAPS / GROUND BEAMS AND A CONTINUOUS GRADE CANNOT BE ACHIEVED PIPE SHOULD BE SET AT A MIN 1:40 GRADIENT UNTIL CLEAR OF PILECAP FOOTPRINT WITH A BEND TO ALLOW FOR STEEP GRADIENT CONNECTION TO DOWNSTREAM INSPECTION CHAMBER. REFER TO TYPICAL DETAIL ON DRAWING C-31001

- FOUL SEWER 100mm DIAMETER UNLESS OTHERWISE NOTED
- STORM SEWER 150mm DIAMETER UNLESS OTHERWISE NOTED
- COMBINED SEWER 150mm DIAMETER UNLESS OTHERWISE NOTED
- EXISTING PUBLIC COMBINED SEWER
- PROPOSED S185 CW SEWER DIVERSION
- FOUL SEWER INSPECTION CHAMBER 450mm DIAMETER
- STORM SEWER INSPECTION CHAMBER 450mm DIAMETER
- SW INSPECTION CHAMBER CATCHPIT WITH 300mm SUMP
- SW FLOW CONTROL CHAMBER
- COMBINED SEWER INSPECTION CHAMBER / MANHOLE
- STUB STACK
- SVP
- RWP
- FLOOR GULLY
- SLOT DRAIN ACO M100D WITH BRICKSLOT ST GRATING
- YARD GULLY

Date	Rev	Description	Drawn	Chkd
11.07.22	C01	ISSUED FOR CONSTRUCTION	JG	CK
08.12.22	P07	RWP ADDED/LAYOUT AMENDED	CD	JG
29.11.22	P06	DRAINAGE UPDATED	CD	CK
25.11.22	P05	DRAINAGE UPDATED	JG	CK
02.11.22	P04	DRAINAGE UPDATED	CD	CK
18.10.22	P03	UPDATED FFLs AND DRAINAGE	CD	CK
12.09.22	P02	COORDINATED WITH M&E DESIGN	JG	CK
04.07.22	P01	FOR INFORMATION	CD	CK

Civic Engineers

Project
ONE VICTORIA MANCHESTER

Title
DRAINAGE GENERAL ARRAGEMENT

Status
CONSTRUCTION

Project Number	Scale @ A1	Date Created	Drawn	Checked	Suitable
756-02	1:100	04.07.22	CD	CK	----

Drawing Number
204-CIV-00-XX-DR-C-30001

Revision
C01







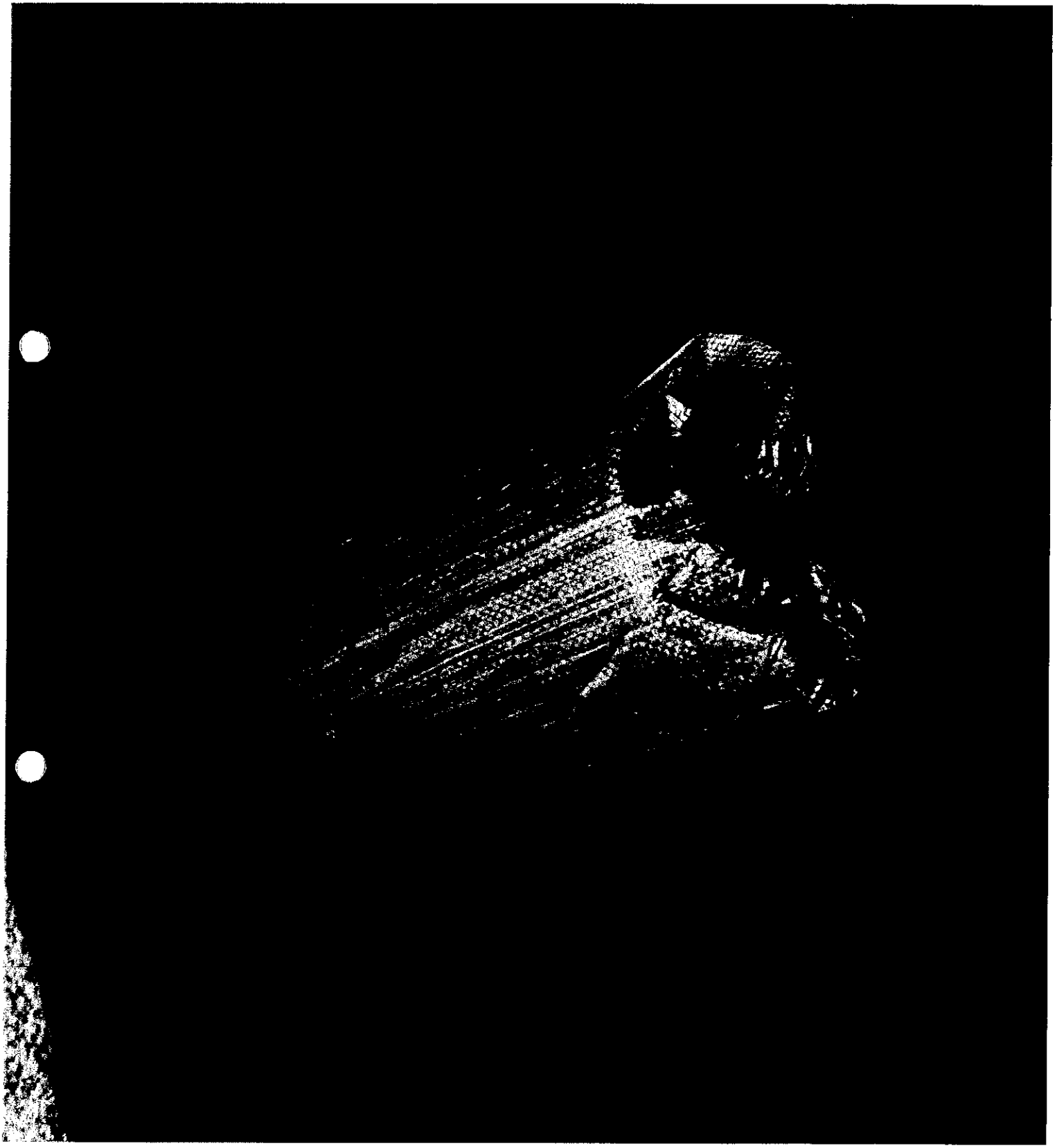





Here for the show?
Let's go!
FAIRFAX











CMTL Limited
Warrington Laboratory
Ruby House
40A Hardwich Grange
Warrington
WA1 4RF

CONSTRUCTION MATERIALS TESTING LABORATORIES
A PHENNA GROUP COMPANY

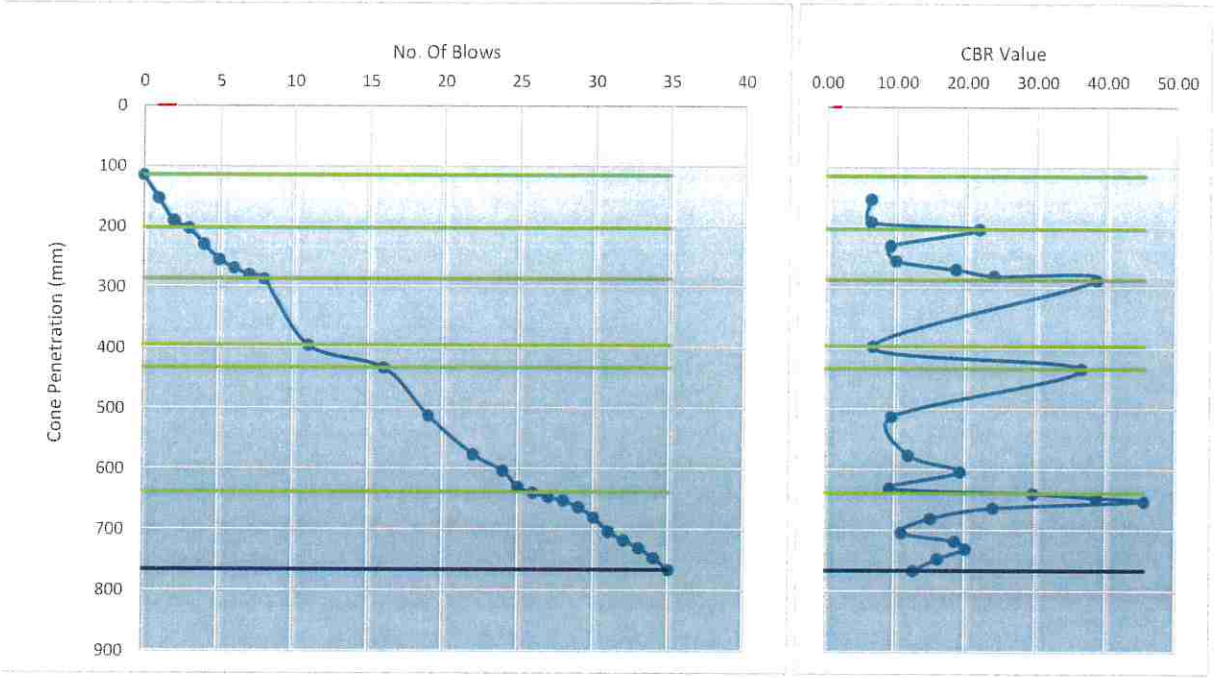
UKAS TESTING
1740

LABORATORY TEST REPORT

Determonation of Layer Thickness/CBR by Dynamic Cone Penetrometer Testing

Project :	One Victoria, Manchester	Job Number:	WAR00041
Client :	Spencer Civil Engineering	Lab Ref Number	WAR00041/1
	Mirable Street	Date Tested:	11/08/2023
	Manchester	Date Reported:	14/08/2023
	M3 1PJ		
Originator :	Jaiden Watts		

Test Ref :	4	**Test Depth:**	766
Test Location:	BRHS	**Technician:**	Paul McLoughlin
Material:	Recycled 6F2	**Weather:**	Unrecorded
Visual Description:	Satisfactory		



CS229 Layer Thickness and CBR Value			
Layer Start (mm)	**Layer End (mm)**	**mm Per Blow**	**Estimated CBR Values (%)**
115	203	29.3	8.5
203	287	16.8	15.3
287	396	36.3	6.8
396	433	7.4	36.4
433	639	20.6	12.3
639	766	14.1	18.4
IAN 73/06 50th Percentile CBR and Stiffness Modulus			
50	550	Estimated CBR Value (%)	N/A
50	550	Surface Stiffness Modulus (Mpa)	N/A

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.
Dynamic cone penetrometer testing carried out in accordance with CS229 and manufacturers instruction manual
Calculation of 50th Percetile CBR in accordance with IAN 73/06

CMTL Limited Approved Signature
Mark Beastall

CMTL Limited
Warrington Laboratory
Ruby House
40A Hardwich Grange
Warrington
WA1 4RF

CONSTRUCTION MATERIALS TESTING LABORATORIES
A PHENNA GROUP COMPANY

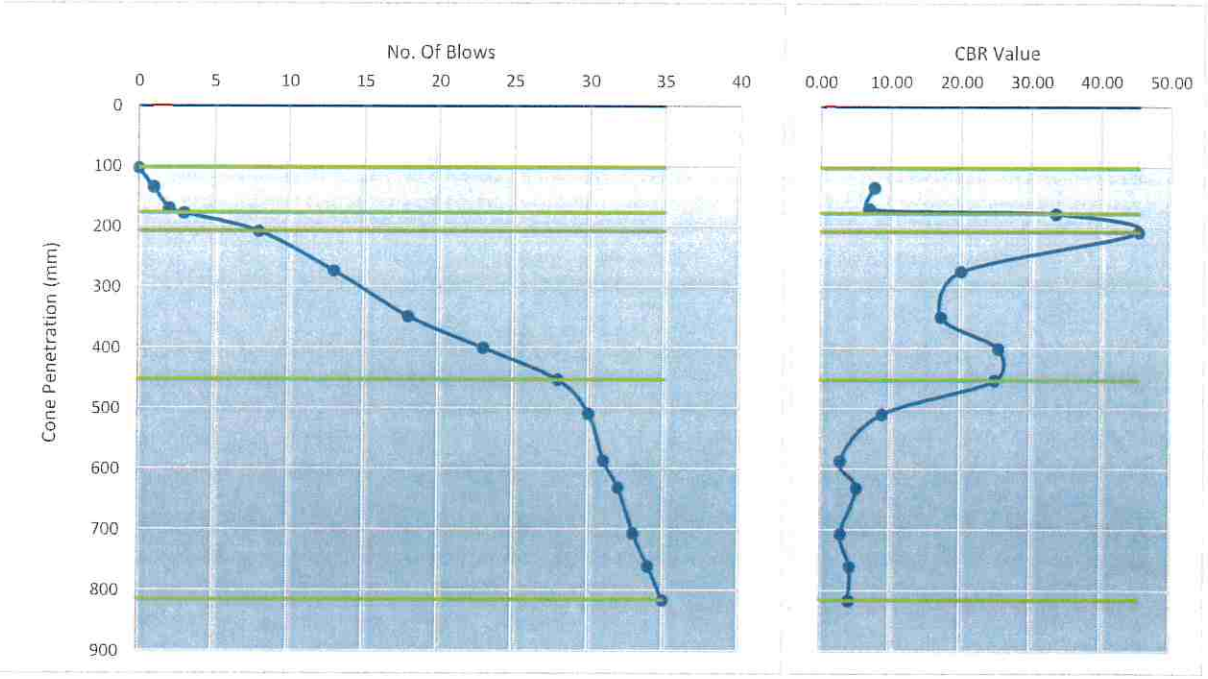
1740

LABORATORY TEST REPORT

Determonation of Layer Thickness/CBR by Dynamic Cone Penetrometer Testing

Project :	One Victoria, Manchester	Job Number:	WAR00041
Client :	Spencer Civil Engineering	Lab Ref Number	WAR00041/1
	Mirable Street	Date Tested:	11/08/2023
	Manchester	Date Reported:	14/08/2023
	M3 1PJ		
Originator :	Jaiden Watts		

Test Ref :	5	**Test Depth:**	816
Test Location:	L Centre	**Technician:**	Paul McLoughlin
Material:	Recycled 6F2	**Weather:**	Unrecorded
Visual Description:	Satisfactory		



CS229 Layer Thickness and CBR Value			
Layer Start (mm)	**Layer End (mm)**	**mm Per Blow**	**Estimated CBR Values (%)**
103	178	25.0	10.1
178	208	6.0	45.4
208	453	12.3	21.4
453	816	51.9	4.6

IAN 73/06 50th Percentile CBR and Stiffness Modulus			
50	550	Estimated CBR Value (%)	N/A
50	550	Surface Stiffness Modulus (Mpa)	N/A

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.
Dynamic cone penetrometer testing carried out in accordance with CS229 and manufacturers instruction manual
Calculation of 50th Percetile CBR in accordance with IAN 73/06

CMTL Limited Approved Signature
Mark Beastall

CMTL Limited
Warrington Laboratory
Ruby House
40A Hardwich Grange
Warrington
WA1 4RF

CONSTRUCTION MATERIALS TESTING LABORATORIES
A PHENNA GROUP COMPANY

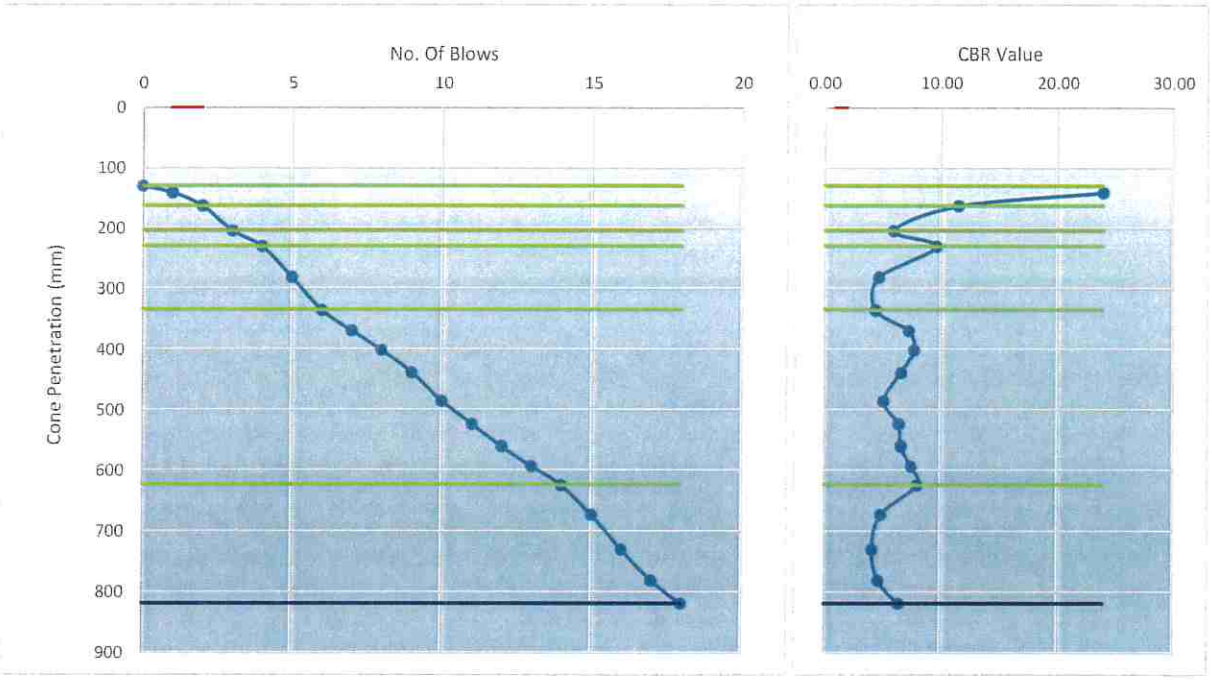
1740

LABORATORY TEST REPORT

Determonation of Layer Thickness/CBR by Dynamic Cone Penetrometer Testing

Project :	One Victoria, Manchester	Job Number:	WAR00041
Client :	Spencer Civil Engineering	Lab Ref Number	WAR00041/1
	Mirable Street	Date Tested:	11/08/2023
	Manchester	Date Reported:	14/08/2023
	M3 1PJ		
Originator :	Jaiden Watts		

Test Ref :	6	**Test Depth:**	819
Test Location:	R Centre	**Technician:**	Paul McLoughlin
Material:	Recycled 6F2	**Weather:**	Unrecorded
Visual Description:	Satisfactory		



CS229 Layer Thickness and CBR Value			
Layer Start (mm)	**Layer End (mm)**	**mm Per Blow**	**Estimated CBR Values (%)**
130	163	16.5	15.6
163	204	41.0	6.0
204	230	26.0	9.6
230	335	52.5	4.6
335	624	36.1	6.8
624	819	48.8	5.0
IAN 73/06 50th Percentile CBR and Stiffness Modulus			
50	550	Estimated CBR Value (%)	N/A
50	550	Surface Stiffness Modulus (Mpa)	N/A

The stated result only relates to the item/location tested, this report shall not be reproduced except in full.
Dynamic cone penetrometer testing carried out in accordance with CS229 and manufacturers instruction manual
Calculation of 50th Percetile CBR in accordance with IAN 73/06

CMTL Limited Approved Signature
Mark Beastall

Drainage and Manholes

CHECKSHEET

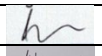
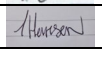
Contract:	**One Victoria**	Contract no.:	**204**		**QA1**
Inspection details					
Description:	CWD03 1.8mØ (Mirabel Street Repair)				
Check sheet details					
Drawing references used:	**204-CIV-00-XX-DR-D-3110 & 204-CIV-00-XX-DR-D-3111**				
Has setting out check sheet been signed off?	Yes	☐			
Details of drainage and manholes to be installed:					
Material:	Concrete		Size:	**1.8mØ**	
Excavation support method:	**Sheet Piles**				
Concrete grade where applicable	GEN3N / mm2				
Where special installation instructions are to be followed, particularly for interceptors, give brief details. :					
All materials and plant available on site?	Yes	☐			
Area released for construction:	Initials:	T.H	Date:	**15.05.25**	

Drainage pipes laid to correct depth and gradient?	Yes	☐	No	☐
Correct P Gravel installed as per specification?	Yes	☐	No	☐
Concrete base installed to specification?	Yes	☐	N/A	☐
Channels / branches / haunching to specification?	Yes	☐	N/A	☐
M/H rings / concrete surround or poly chamber or brickwork to specification?	Yes	☐	N/A	☐
Step irons / ladder rung irons / ladder to specification?	Yes	☐	N/A	☐
Air/ water test carried out to specification?	Yes	☐	No	☐
Inspection carried out by Building Control?	Yes	☐	No	☐
Area correctly backfilled?	Yes	☐	N/A	☐
Actual installed position recorded for as-built drawing?	Yes	☐	N/A	☐
Manhole / chamber / interceptor clean and cover(s) installed at correct level?	Yes	☐	N/A	☐

Area released for next activity:

This check sheet has been issued with the purpose to progress 'the works'.
All work is subject to a final inspection and customer approval at the date of project handover.
This checklist is flexible to allow full checking process by all parties.

Drainage and Manholes checked, approved and released for next activity:

PRINT NAME	COMPANY NAME Torsion, Sub-contractor or third party sign off (delete as applicable)	PRINT JOB TITLE:	SIGNATURE:	DATE:
Aiden Bougourd	**Torsion**	**Engineer**		**11.06.25**
Tom Harrison	**Spencer's**	**Manager**		**11.06.25**

Drainage guidance

Preparation
- Check risk assessment measures are implemented and method statement is understood by all
- The site team will obtain and use appropriate permits to work from the client, utilities, local authorities or other
- Existing services, which may present hazard or danger, will be identified and appropriate protective measures taken
- Obtain the clients or appropriate authorities instructions regarding the protection, support or other action required to any existing service located in or adjacent to the work. Plan for any temporary support
- Plan plant requirements, methods of work and produce appropriate method statements.

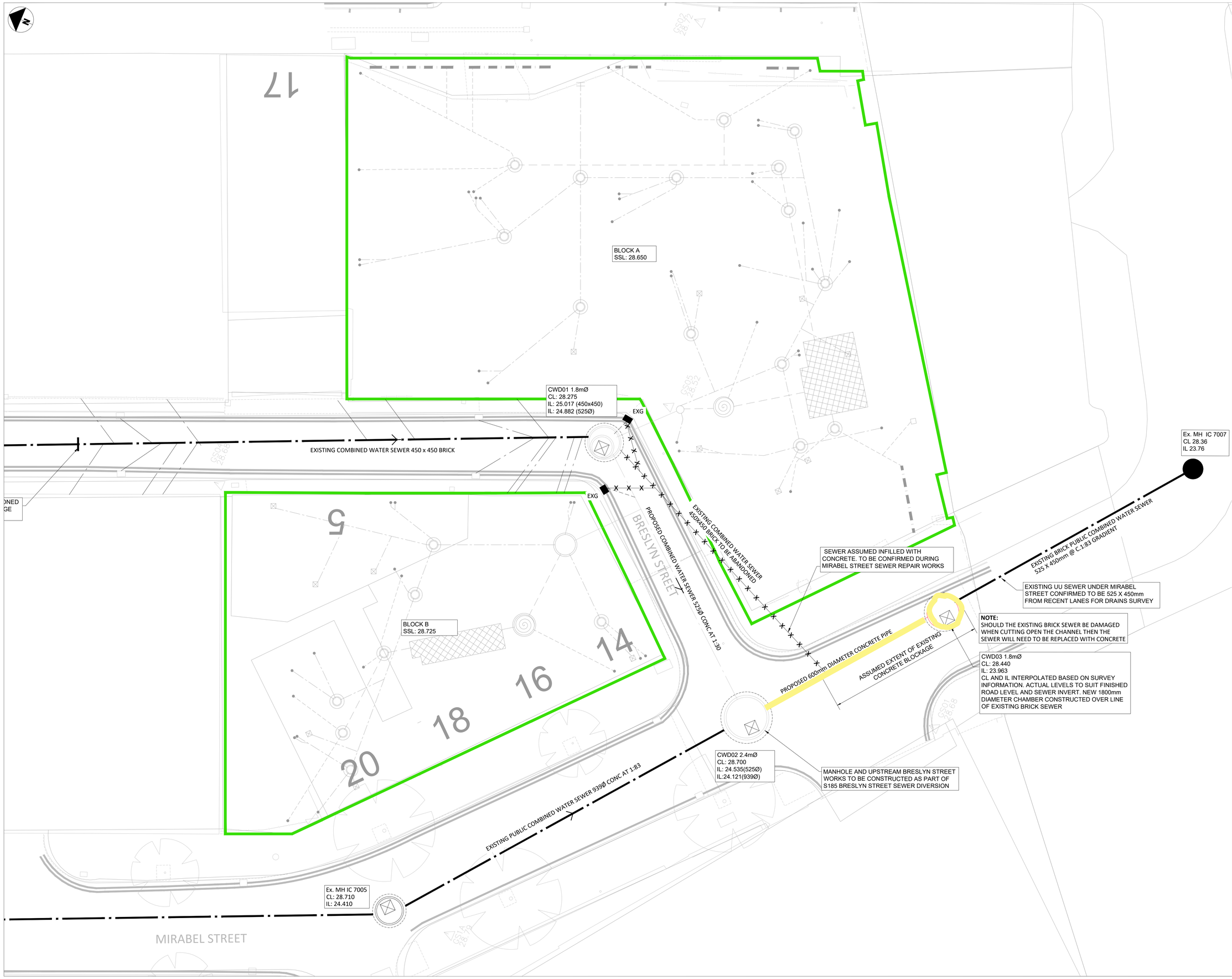
Excavation for services
- Dig by hand or machine in accordance with any permits
- Support excavation as per method statement. Adhere to designed shoring systems produced
- Give the client or building control reasonable opportunity to inspect the excavated formation.

Laying of services
- Concrete grades for services work will be specified or shown on drawings
- Free draining bedding media will be placed in the trench and pipes laid to specific gradients. Ensure that the barrel of the pipe is fully supported by the granular surround
- Measures will be taken to prevent material entering the pipe run
- Air tests will be carried out prior to backfill to ensure that joints are not leaking
- After backfill, each drainage run will be checked, tested and witnessed as required and recorded.

Air tests
In the absence of any specified tests the following procedure will be adopted:
- Seal the ends of the pipe and any junction pipes. Note that the pipelines should not be left with plugs in where there is a risk of trench filling with water before it is backfilled, or floatation may occur
- Attach a u-tube (manometer) and a means of applying the air pressure to one of the plugs
- Apply pressure either by mouth or by a hand pump to achieve a pressure slightly more than 100mm of water in the u-tube
- Allow about five minutes for stabilisation of air temp
- Adjust air pressure to 100mm of water
- Without further pumping, the head of water should not fall by more than 25mm in a period of five minutes
- Should a pipeline marginally fail an air test, it should be re-tested using water.

Water test (use only when specified or when air test fails)
The following test procedure will be adopted:
- Fit an expanding plug, suitable to resist the full hydrostatic head, at the lower end of the pipe and in any branches if necessary. The pipes may need strutting to prevent movement
- Fit a similar plug and strutting at the higher end but with access for hose and standpipe
- Fill the system with water ensuring that these are no pockets of entrapped air
- Fill the standpipe to requisite level
- Leave for at least two hours to enable the pipe to become saturated, topping up as necessary
- After the absorption period measure the loss of water from the system be noting the amount of water needed to maintain the level in the standpipe over a further period of 30 minutes, the standpipe being topped up at regular intervals of five minutes.

Finishing of services
- Manholes will be inspected and where specified tested and recorded
- Where specified or instructed by the client or statutory bodies, provide markers, warning tape, colour coding on pipes, or coloured concrete to identify the position of underground services
- When they differ from working drawings, record the position and orientation of pipe junctions, service crossings, land drains etc.



Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
2. This drawing should not be scaled.
3. All dimensions are to be verified by the contractor on site.
4. All discrepancies should be reported to the C.A. prior to the commencement of the works.

© CIVIC ENGINEERS LIMITED

Notes and Keys

- EXISTING PUBLIC COMBINED SEWER
- EXISTING CONNECTION INTO PUBLIC COMBINED SEWER TO BE RETAINED
- EXISTING PUBLIC COMBINED SEWER TO BE ABANDONED
- EXG — EXISTING HIGHWAY GULLY WITH NEW CONNECTION. EXISTING CONNECTION ABANDONED
- PROPOSED PUBLIC COMBINED SEWER DIVERSION
- PROPOSED COMBINED PLOT CONNECTION

ALL CONNECTIONS TO EXISTING SEWER BELOW BRESLYN STREET TO BE RETAINED

ALL PRIVATE DRAINAGE SHOWN INDICATIVELY FOR CO-ORDINATION PURPOSES. NEW CONNECTIONS TO PUBLIC SEWER WILL BE SUBJECT TO A SEPARATE S106 APPLICATION

TOPOGRAPHICAL SURVEY BY SURVEY SOLUTIONS. DRG NO: 41020MCLS-01 RECEIVED ON 07.09.22

ALL SEWERAGE WORKS TO COMPLY WITH SEWERAGE SECTOR GUIDANCE APPENDIX C "THE DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS OFFERED FOR ADOPTION" (THE DCG FOR SEWERAGE)

EXACT LOCATION OF EXISTING PUBLIC COMBINED SEWER IN BRESLYN STREET TO BE CONFIRMED. ASSUMED ROUTE SHOWN. ALL DRAINAGE PROPOSALS ARE SUBJECT TO CONFIRMATION OF EXISTING SEWER LEVELS

ALL WORKS SUBJECT TO UNITED UTILITIES APPROVAL

NO WORKS TO THE PUBLIC SEWER TO BE UNDERTAKEN WITHOUT AGREEMENT FROM UNITED UTILITIES

Date	Rev	Description	Drawn	Chkd
06.03.25	C01	FOR CONSTRUCTION	ZHH	CK
21.11.24	P01	FOR APPROVAL	CK	CK

Civic Engineers

MANCHESTER Carver's Warehouse, 77 Dale Street, Manchester, M1 2HG. Tel: 0161 228 6757
LONDON Reeds Wharf, 33 Mill Street, London SE1 2AX. Tel: 020 7253 2977
LEEDS Tower Works, Unit 02-01, Globe Road, Leeds, LS11 5QG. Tel: 0113 2025 130
GLASGOW Gresham Chambers, 45 West Nile St, Glasgow, G1 2PT. Tel: 0141 370 1829

www.civicengineers.com

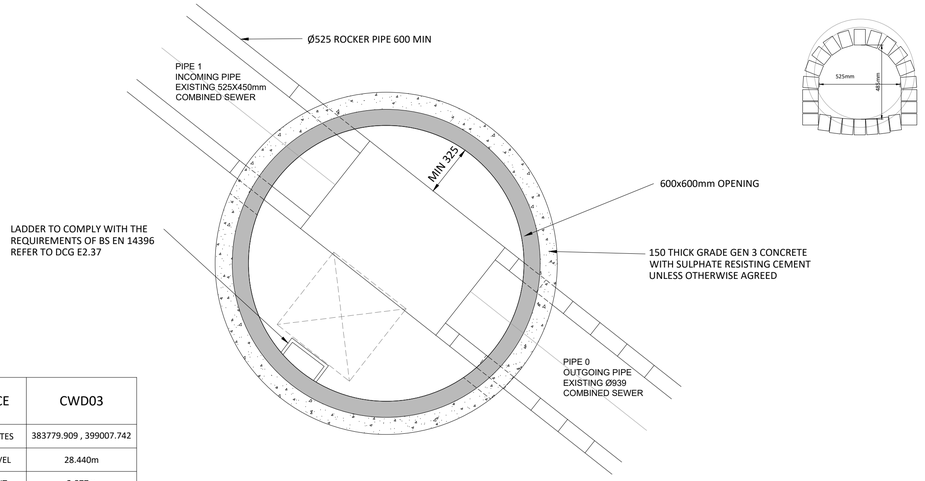
Project
ONE VICTORIA
GREAT DUCIE STREET

Title
MIRABLE STREET SEWER
EMERGENCY REPAIR GA

Status
CONSTRUCTION

Project Number	Scale @ A1	Date Created	Drawn	Checked	Suitability
756-02	1:100	NOV 24	CK	CK	----

Drawing Number: 204-CIV-00-XX-DR-D-3110
Revision: P01



CWD03
Ø1800

MH REFERENCE	CWD03	
MANHOLE COORDINATES	383779.909 , 399007.742	
MANHOLE COVER LEVEL	28.440m	
DEPTH TO PIPE SOFFIT	3.877m	
MANHOLE TYPE	TYPE A	
	INVERT LEVEL	DIMENSIONS
	23.963m 23.963m	525Ø 525 x 450
INTERNAL CHAMBER SIZE	1.800m	
MIN CLEAR OPENING SIZE	600mm x 600mm	
COVER DEPTH	150mm	
COVER SPEC	D400	
CHAMBER SHAFT SIZE	N/A	
CHAMBER SHAFT DEPTH	N/A	
	YES	
SAFETY CHAINS	YES	
ACCESS TYPE	LADDER	
HOLE SIZE IN COVER SLAB	600mm x 600mm	

STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
2. THIS DRAWING SHOULD NOT BE SCALED.
3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE.
4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

© CIVIC ENGINEERS LIMITED

DATE	REV	DESCRIPTION	DRAWN	CHKD
06.03.25	C01	FOR CONSTRUCTION	CK	CK

Civic Engineers

MANCHESTER Carver's Warehouse, 77 Dale Street, Manchester, M1 2HG. Tel: 0161 228 6757
LONDON Reeds Wharf, 33 Mill Street, London SE1 2AX. Tel: 020 7253 2977
LEEDS 1 Saw Mill Street, Water Lane, Leeds, LS11 5WE. Tel: 0113 2025 130
GLASGOW 35 Virginia Street, Glasgow, G1 1TN. Tel: 0141 370 1829

www.civicengineers.com

PROJECT

ONE VICTORIA
GREAT DUCIE STREET

TITLE

MIRABEL STREET SEWER
EMERGENCY REPAIR MANHOLE DETAIL

DRAWING STATUS	STATUS CODE
CONSTRUCTION	-

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
756-02	1:20	MAR '24	CK	CK

DRAWING No.	REV
204-CIV-00-XX-DR-D-3111	C01



Thursday 15 May 2025 · 11:20 am Edit

20250515_112057.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.24 MB | 3000x4000 | 12MP

ISO 80 | 13mm | 0.0ev | F2.2 | 1/100 s

Add tag



Friday 16 May 2025 · 9:06 am Edit

20250516_090608.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.60 MB | 3000x4000 | 12MP

ISO 500 | 23mm | 0.0ev | F1.8 | 1/50 s

Add tag



Tuesday 20 May 2025 · 9:37 am Edit

20250520_093747.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.22 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/112 s

Add tag



Tuesday 20 May 2025 · 12:07 pm Edit

20250520_120701.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

3.92 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/514 s

Add tag



Wednesday 21 May 2025 · 8:55 am Edit

20250521_085502.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.21 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/113 s

Add tag



Wednesday 21 May 2025 · 9:31 am Edit

20250521_093139.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.06 MB | 3000x4000 | 12MP

ISO 160 | 23mm | 0.0ev | F1.8 | 1/100 s

Add tag



Wednesday 21 May 2025 · 9:41 am Edit

20250521_094132.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.21 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/124 s

Add tag



Wednesday 21 May 2025 · 9:41 am Edit

20250521_094132.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.21 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/124 s

Add tag



Wednesday 21 May 2025 · 9:59 am Edit

20250521_095903.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

3.14 MB | 3000x4000 | 12MP

ISO 64 | 13mm | 0.0ev | F2.2 | 1/50 s

Add tag



Thursday 22 May 2025 · 3:08 pm Edit

20250522_150803.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

2.50 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/734 s

Add tag



Friday 30 May 2025 · 2:57 pm Edit

20250530_145724.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.48 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/180 s

Add tag



Monday 2 June 2025 · 2:22 pm Edit

20250602_142212.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.58 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/358 s

Add tag



Tuesday 3 June 2025 · 11:22 am Edit

20250603_112228.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

6.59 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/403 s

Add tag



Wednesday 11 June 2025 · 2:25 pm Edit

20250611_142554.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.38 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/180 s

Add tag

Drainage and Manholes

CHECKSHEET

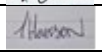
Contract:	**One Victoria**	Contract no.:	**204**		**QA2**
Inspection details					
Description:	CWD01				
Check sheet details					
Drawing references used:	**204-CIV-00-XX-D-3110**				
Has setting out check sheet been signed off?	Yes	☐			
Details of drainage and manholes to be installed:					
Material:	Concrete		Size:	**Ø1200 SHAFT CONNECTING TO Ø1800 CHAMBER**	
Excavation support method:	**Sheet piles and vacuum**				
Concrete grade where applicable	GEN3N / mm2				
Where special installation instructions are to be followed, particularly for interceptors, give brief details. :	N/A				
All materials and plant available on site?	Yes	☐			
Area released for construction:	Initials:	T.H	Date:	**16.06.25**	

Drainage pipes laid to correct depth and gradient?	Yes	☐	No	☐
Correct P Gravel installed as per specification?	Yes	☐	No	☐
Concrete base installed to specification?	Yes	☐	N/A	☐
Channels / branches / haunching to specification?	Yes	☐	N/A	☐
M/H rings / concrete surround or poly chamber or brickwork to specification?	Yes	☐	N/A	☐
Step irons / ladder rung irons / ladder to specification?	Yes	☐	N/A	☐
Air/ water test carried out to specification?	Yes	☐	No	☐
Inspection carried out by Building Control?	Yes	☐	No	☐
Area correctly backfilled?	Yes	☐	N/A	☐
Actual installed position recorded for as-built drawing?	Yes	☐	N/A	☐
Manhole / chamber / interceptor clean and cover(s) installed at correct level?	Yes	☐	N/A	☐

Area released for next activity:

This check sheet has been issued with the purpose to progress 'the works'.
All work is subject to a final inspection and customer approval at the date of project handover.
This checklist is flexible to allow full checking process by all parties.

Drainage and Manholes checked, approved and released for next activity:

PRINT NAME	COMPANY NAME Torsion, Sub-contractor or third party sign off (delete as applicable)	PRINT JOB TITLE:	SIGNATURE:	DATE:
Aiden Bougourd	**Torsion**	**Engineer**		**08.07.25**
Tom Harrison	**Spencer's**	**Manager**		**08.07.25**

Drainage guidance

Preparation
- Check risk assessment measures are implemented and method statement is understood by all
- The site team will obtain and use appropriate permits to work from the client, utilities, local authorities or other
- Existing services, which may present hazard or danger, will be identified and appropriate protective measures taken
- Obtain the clients or appropriate authorities instructions regarding the protection, support or other action required to any existing service located in or adjacent to the work. Plan for any temporary support
- Plan plant requirements, methods of work and produce appropriate method statements.

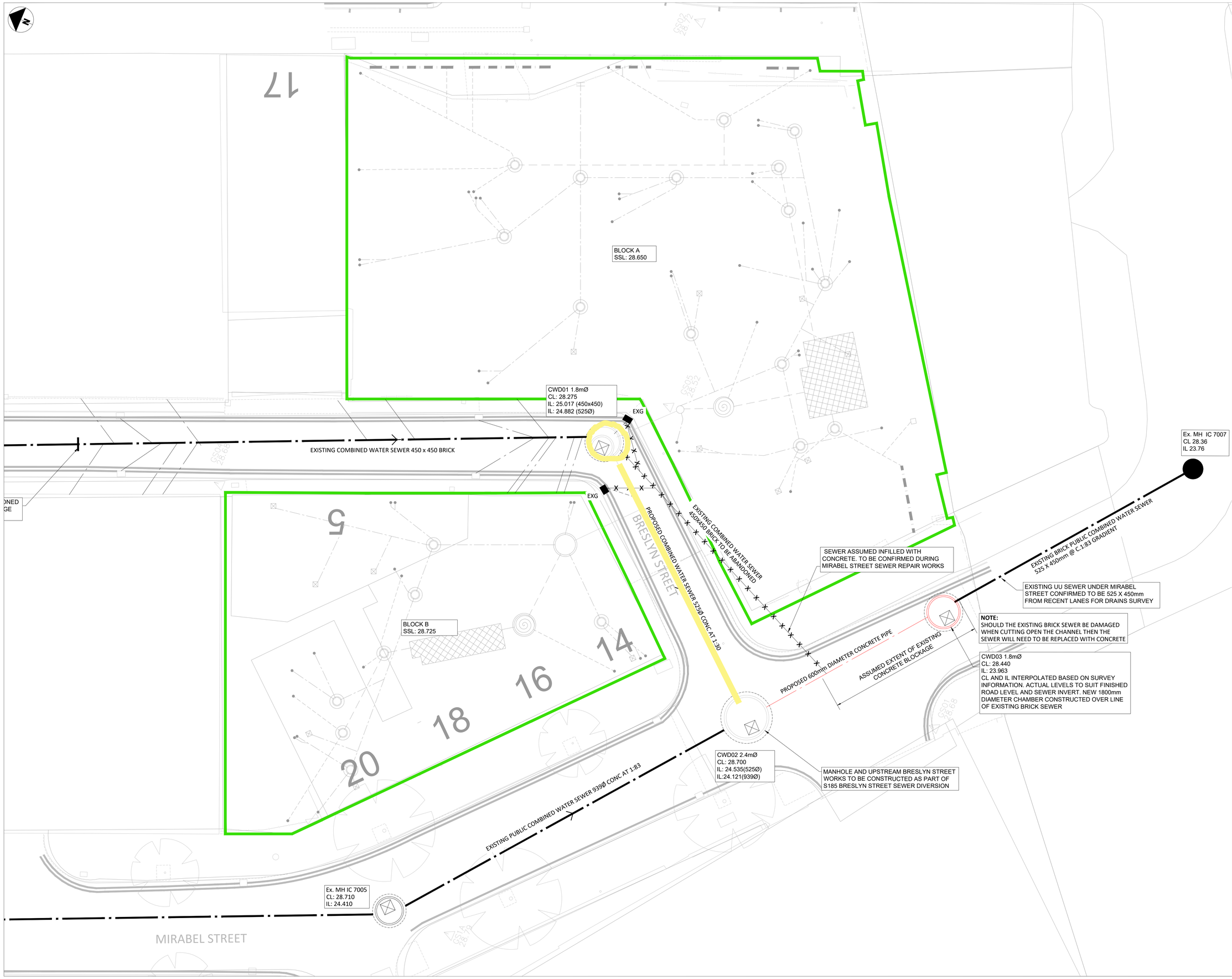
Excavation for services
- Dig by hand or machine in accordance with any permits
- Support excavation as per method statement. Adhere to designed shoring systems produced
- Give the client or building control reasonable opportunity to inspect the excavated formation.

Laying of services
- Concrete grades for services work will be specified or shown on drawings
- Free draining bedding media will be placed in the trench and pipes laid to specific gradients. Ensure that the barrel of the pipe is fully supported by the granular surround
- Measures will be taken to prevent material entering the pipe run
- Air tests will be carried out prior to backfill to ensure that joints are not leaking
- After backfill, each drainage run will be checked, tested and witnessed as required and recorded.

Air tests
In the absence of any specified tests the following procedure will be adopted:
- Seal the ends of the pipe and any junction pipes. Note that the pipelines should not be left with plugs in where there is a risk of trench filling with water before it is backfilled, or floatation may occur
- Attach a u-tube (manometer) and a means of applying the air pressure to one of the plugs
- Apply pressure either by mouth or by a hand pump to achieve a pressure slightly more than 100mm of water in the u-tube
- Allow about five minutes for stabilisation of air temp
- Adjust air pressure to 100mm of water
- Without further pumping, the head of water should not fall by more than 25mm in a period of five minutes
- Should a pipeline marginally fail an air test, it should be re-tested using water.

Water test (use only when specified or when air test fails)
The following test procedure will be adopted:
- Fit an expanding plug, suitable to resist the full hydrostatic head, at the lower end of the pipe and in any branches if necessary. The pipes may need strutting to prevent movement
- Fit a similar plug and strutting at the higher end but with access for hose and standpipe
- Fill the system with water ensuring that these are no pockets of entrapped air
- Fill the standpipe to requisite level
- Leave for at least two hours to enable the pipe to become saturated, topping up as necessary
- After the absorption period measure the loss of water from the system be noting the amount of water needed to maintain the level in the standpipe over a further period of 30 minutes, the standpipe being topped up at regular intervals of five minutes.

Finishing of services
- Manholes will be inspected and where specified tested and recorded
- Where specified or instructed by the client or statutory bodies, provide markers, warning tape, colour coding on pipes, or coloured concrete to identify the position of underground services
- When they differ from working drawings, record the position and orientation of pipe junctions, service crossings, land drains etc.



Standard Notes

1. This drawing is to be read in conjunction with all relevant Architect's and Engineer's drawings and the specification.
2. This drawing should not be scaled.
3. All dimensions are to be verified by the contractor on site.
4. All discrepancies should be reported to the C.A. prior to the commencement of the works.

© CIVIC ENGINEERS LIMITED

Notes and Keys

- EXISTING PUBLIC COMBINED SEWER
- EXISTING CONNECTION INTO PUBLIC COMBINED SEWER TO BE RETAINED
- EXISTING PUBLIC COMBINED SEWER TO BE ABANDONED
- EXG — EXISTING HIGHWAY GULLY WITH NEW CONNECTION. EXISTING CONNECTION ABANDONED
- PROPOSED PUBLIC COMBINED SEWER DIVERSION
- PROPOSED COMBINED PLOT CONNECTION

ALL CONNECTIONS TO EXISTING SEWER BELOW BRESLYN STREET TO BE RETAINED

ALL PRIVATE DRAINAGE SHOWN INDICATIVELY FOR CO-ORDINATION PURPOSES. NEW CONNECTIONS TO PUBLIC SEWER WILL BE SUBJECT TO A SEPARATE S106 APPLICATION

TOPOGRAPHICAL SURVEY BY SURVEY SOLUTIONS. DRG NO: 41020MCLS-01 RECEIVED ON 07.09.22

ALL SEWERAGE WORKS TO COMPLY WITH SEWERAGE SECTOR GUIDANCE APPENDIX C "THE DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS OFFERED FOR ADOPTION" (THE DCG FOR SEWERAGE)

EXACT LOCATION OF EXISTING PUBLIC COMBINED SEWER IN BRESLYN STREET TO BE CONFIRMED. ASSUMED ROUTE SHOWN. ALL DRAINAGE PROPOSALS ARE SUBJECT TO CONFIRMATION OF EXISTING SEWER LEVELS

ALL WORKS SUBJECT TO UNITED UTILITIES APPROVAL

NO WORKS TO THE PUBLIC SEWER TO BE UNDERTAKEN WITHOUT AGREEMENT FROM UNITED UTILITIES

Date	Rev	Description	Drawn	Chkd
06.03.25	C01	FOR CONSTRUCTION	ZHH	CK
21.11.24	P01	FOR APPROVAL	CK	CK

Civic Engineers

MANCHESTER Carver's Warehouse, 77 Dale Street, Manchester, M1 2HG. Tel: 0161 228 6757
LONDON Reeds Wharf, 33 Mill Street, London SE1 2AX. Tel: 020 7253 2977
LEEDS Tower Works, Unit 02-01, Globe Road, Leeds, LS11 5QG. Tel: 0113 2025 130
GLASGOW Gresham Chambers, 45 West Nile St, Glasgow, G1 2PT. Tel: 0141 370 1829

www.civicengineers.com

Project
ONE VICTORIA
GREAT DUCIE STREET

Title
MIRABLE STREET SEWER
EMERGENCY REPAIR GA

Status
CONSTRUCTION

Project Number	Scale @ A1	Date Created	Drawn	Checked	Suitability
756-02	1:100	NOV 24	CK	CK	----

Drawing Number
204-CIV-00-XX-DR-D-3110

Revision
P01



Monday 16 June 2025 · 11:39 am Edit

20250616_113923.jpg

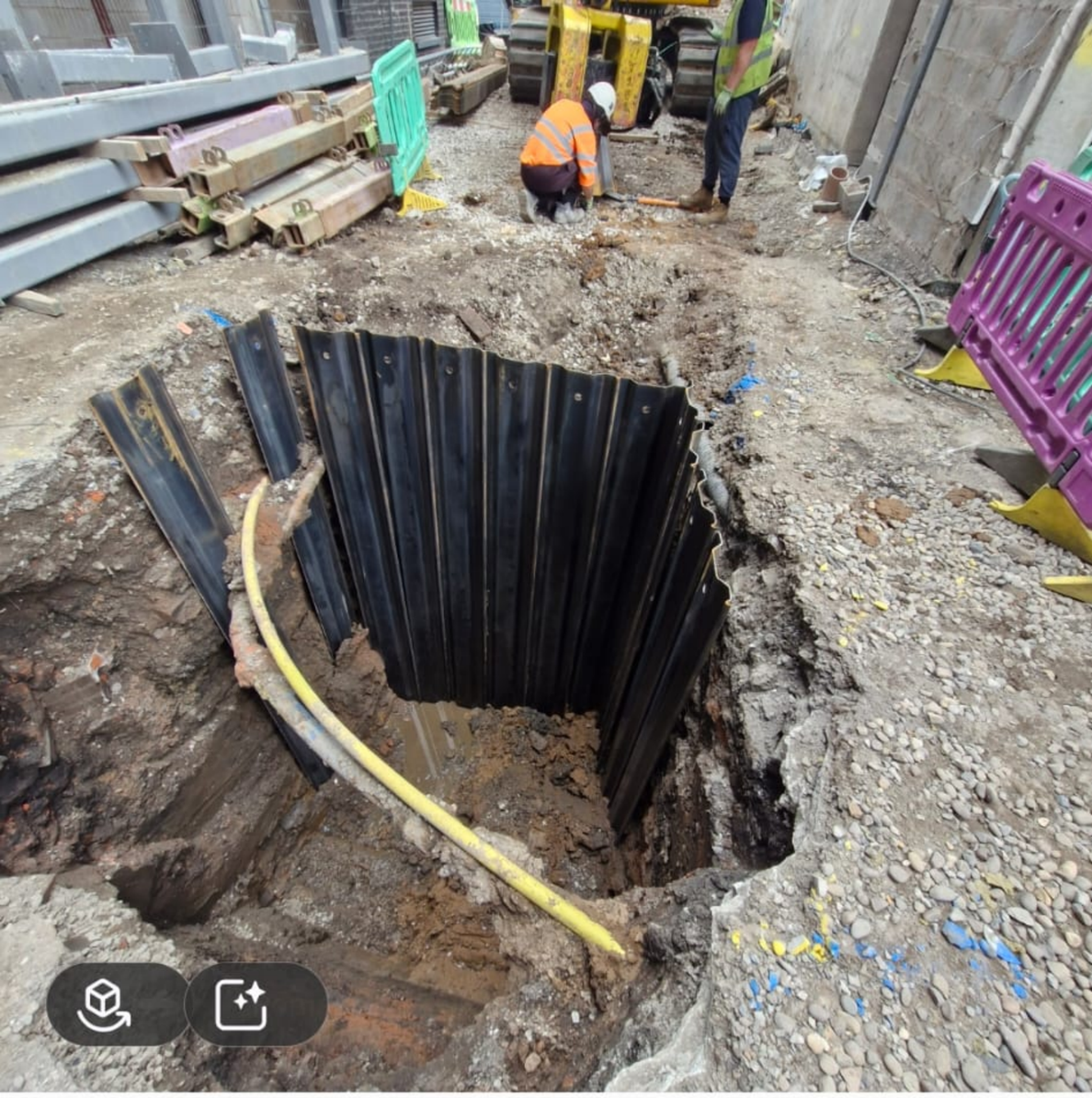
/Internal storage/DCIM/Camera

Galaxy S23 FE

4.57 MB | 3000x4000 | 12MP

ISO 50 | 13mm | 0.0ev | F2.2 | 1/50 s

Add tag



Tuesday 17 June 2025 · 2:48 pm Edit

20250617_144813.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.32 MB | 3000x4000 | 12MP

ISO 100 | 13mm | 0.0ev | F2.2 | 1/50 s

Add tag



Wednesday 18 June 2025 · 11:37 am Edit

20250618_113717.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.09 MB | 3000x4000 | 12MP

ISO 64 | 13mm | 0.0ev | F2.2 | 1/50 s

Add tag



Wednesday 18 June 2025 · 11:37 am Edit

20250618_113717.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.09 MB | 3000x4000 | 12MP

ISO 64 | 13mm | 0.0ev | F2.2 | 1/50 s

Add tag



Wednesday 18 June 2025 · 11:37 am Edit

20250618_113720.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.03 MB | 3000x4000 | 12MP

ISO 80 | 13mm | 0.0ev | F2.2 | 1/50 s

Add tag



Friday 20 June 2025 · 11:43 am Edit

20250620_114314.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

3.97 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/219 s

Add tag



Monday 23 June 2025 · 12:42 pm Edit

20250623_124231.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.08 MB | 3000x4000 | 12MP

ISO 125 | 23mm | 0.0ev | F1.8 | 1/180 s

Add tag



Tuesday 24 June 2025 · 7:31 am Edit

20250624_073144.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.94 MB | 3000x4000 | 12MP

ISO 250 | 23mm | 0.0ev | F1.8 | 1/100 s

Add tag



Tuesday 24 June 2025 · 3:25 pm Edit

20250624_152502.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

3.77 MB | 3000x4000 | 12MP

ISO 80 | 13mm | 0.0ev | F2.2 | 1/100 s

Add tag



Wednesday 25 June 2025 · 3:20 pm Edit

20250625_152026.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.12 MB | 3000x4000 | 12MP

ISO 80 | 23mm | 0.0ev | F1.8 | 1/180 s

Add tag



Thursday 26 June 2025 · 11:17 am Edit

20250626_111717.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

3.87 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/180 s

Add tag



Tuesday 1 July 2025 · 10:51 am Edit

20250701_105153.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.67 MB | 3000x4000 | 12MP

ISO 160 | 23mm | 0.0ev | F1.8 | 1/180 s

Add tag



Tuesday 1 July 2025 · 3:39 pm Edit

20250701_153908.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

4.95 MB | 3000x4000 | 12MP

ISO 250 | 23mm | 0.0ev | F1.8 | 1/100 s

Add tag



Thursday 3 July 2025 · 9:19 am Edit

20250703_091918.jpg

/Internal storage/DCIM/Camera

Galaxy S23 FE

5.71 MB | 3000x4000 | 12MP

ISO 50 | 23mm | 0.0ev | F1.8 | 1/235 s

Add tag

Drainage and Manholes

CHECKSHEET

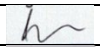
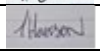
Contract:	**One Victoria**	Contract no.:	**204**		**QA3**
Inspection details					
Description:	CWD02				
Check sheet details					
Drawing references used:	**204-CIV-00-XX-D-3110**				
Has setting out check sheet been signed off?	Yes	☐			
Details of drainage and manholes to be installed:					
Material:	Concrete		Size:	**Ø2400**	
Excavation support method:	**Sheet piles and vacuum**				
Concrete grade where applicable	GEN3N / mm2				
Where special installation instructions are to be followed, particularly for interceptors, give brief details. :	N/A				
All materials and plant available on site?	Yes	☐			
Area released for construction:	Initials:	T.H	Date:	**21.07.25**	

Drainage pipes laid to correct depth and gradient?	Yes	☐	No	☐
Correct P Gravel installed as per specification?	Yes	☐	No	☐
Concrete base installed to specification?	Yes	☐	N/A	☐
Channels / branches / haunching to specification?	Yes	☐	N/A	☐
M/H rings / concrete surround or poly chamber or brickwork to specification?	Yes	☐	N/A	☐
Step irons / ladder rung irons / ladder to specification?	Yes	☐	N/A	☐
Air/ water test carried out to specification?	Yes	☐	No	☐
Inspection carried out by Building Control?	Yes	☐	No	☐
Area correctly backfilled?	Yes	☐	N/A	☐
Actual installed position recorded for as-built drawing?	Yes	☐	N/A	☐
Manhole / chamber / interceptor clean and cover(s) installed at correct level?	Yes	☐	N/A	☐

Area released for next activity:

This check sheet has been issued with the purpose to progress 'the works'.
All work is subject to a final inspection and customer approval at the date of project handover.
This checklist is flexible to allow full checking process by all parties.

Drainage and Manholes checked, approved and released for next activity:

PRINT NAME	COMPANY NAME Torsion, Sub-contractor or third party sign off (delete as applicable)	PRINT JOB TITLE:	SIGNATURE:	DATE:
Aiden Bougourd	**Torsion**	**Engineer**		**07.08.25**
Tom Harrison	**Spencer's**	**Manager**		**07.08.25**

Drainage guidance

Preparation
- Check risk assessment measures are implemented and method statement is understood by all
- The site team will obtain and use appropriate permits to work from the client, utilities, local authorities or other
- Existing services, which may present hazard or danger, will be identified and appropriate protective measures taken
- Obtain the clients or appropriate authorities instructions regarding the protection, support or other action required to any existing service located in or adjacent to the work. Plan for any temporary support
- Plan plant requirements, methods of work and produce appropriate method statements.

Excavation for services
- Dig by hand or machine in accordance with any permits
- Support excavation as per method statement. Adhere to designed shoring systems produced
- Give the client or building control reasonable opportunity to inspect the excavated formation.

Laying of services
- Concrete grades for services work will be specified or shown on drawings
- Free draining bedding media will be placed in the trench and pipes laid to specific gradients. Ensure that the barrel of the pipe is fully supported by the granular surround
- Measures will be taken to prevent material entering the pipe run
- Air tests will be carried out prior to backfill to ensure that joints are not leaking
- After backfill, each drainage run will be checked, tested and witnessed as required and recorded.

Air tests
In the absence of any specified tests the following procedure will be adopted:
- Seal the ends of the pipe and any junction pipes. Note that the pipelines should not be left with plugs in where there is a risk of trench filling with water before it is backfilled, or floatation may occur
- Attach a u-tube (manometer) and a means of applying the air pressure to one of the plugs
- Apply pressure either by mouth or by a hand pump to achieve a pressure slightly more than 100mm of water in the u-tube
- Allow about five minutes for stabilisation of air temp
- Adjust air pressure to 100mm of water
- Without further pumping, the head of water should not fall by more than 25mm in a period of five minutes
- Should a pipeline marginally fail an air test, it should be re-tested using water.

Water test (use only when specified or when air test fails)
The following test procedure will be adopted:
- Fit an expanding plug, suitable to resist the full hydrostatic head, at the lower end of the pipe and in any branches if necessary. The pipes may need strutting to prevent movement
- Fit a similar plug and strutting at the higher end but with access for hose and standpipe
- Fill the system with water ensuring that these are no pockets of entrapped air
- Fill the standpipe to requisite level
- Leave for at least two hours to enable the pipe to become saturated, topping up as necessary
- After the absorption period measure the loss of water from the system be noting the amount of water needed to maintain the level in the standpipe over a further period of 30 minutes, the standpipe being topped up at regular intervals of five minutes.

Finishing of services
- Manholes will be inspected and where specified tested and recorded
- Where specified or instructed by the client or statutory bodies, provide markers, warning tape, colour coding on pipes, or coloured concrete to identify the position of underground services
- When they differ from working drawings, record the position and orientation of pipe junctions, service crossings, land drains etc.