

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

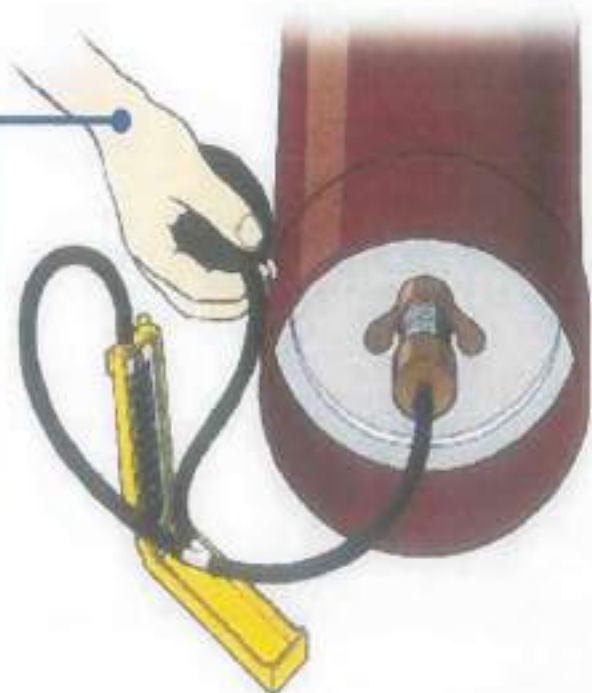
Client: <u>STW</u>	Test date: <u>20/2/21</u>
Drainage Check Sheet Ref no: <u>39</u>	Test Ref. No: <u>39</u>

Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
SW9A-SW9	100	100	150	5	Good	

Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager) <u>[Signature]</u>	Date: <u>20/2/21</u>

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and seating cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'Y' gauge and hand bellows.
4. Fill 'Y' gauge with water, to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the spring side of the gauge, and the lower limit below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe section is leaking.





① **PROJECT NAME: Clarendon Road Phase 3**

Manhole / Drainage run Check Sheet

		Check Sheet No:	41 8101 219	
		Drg Ref & Rev no:		
No	Manhole & Drainage run construction	Details	Checked and Signed	
			GCL	Client
1	Location <u>D1 Fw05 - Fw06</u> Manhole/pipe run Ref <u>Fw05/Fw06</u> Gridline Ref Highlighted location plan attached	<u>Yes/No</u>	✓	✓
2	Manhole size	<u>450</u>	✓	✓
3	Invert level	<u>24010 / 24000</u>	✓	X
4	Manhole cover: Spec, size, orientation & cover level	✓	✓	✓
5	Excavation to correct dimensions/support systems checked		✓	✓
6	Branches & benching: position, line, level checked		✓	✓
7	Rocker pipes installed (if applicable) checked		✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓	✓
9	Brickwork & surround filled as per detail/specification checked.		✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type:	✓	-	N/A
11	Manhole accessible for future use/maintenance	Yes/No	✓	✓
12	Pipe run details Fw05 → Fw06 Fw06 → SVP Fw06 → SVP ①	Material Diameter Length <u>Clay to cast iron</u> <u>150 / 100</u>	✓	✓
13	Spurs for lateral connections: Position, level & co-ordinates checked		✓	✓
14	SVP/RWPs installed to correct position, level and capped off.		✓	✓
15	Anchor blocks to correct detail at specified locations		✓	✓
16	Bedding & surround as specified		✓	✓
17	Air testing passed/witnessed: <u>STW</u>		✓	✓
18	Photos attached		✓	✓
19	Geotextile installed as per specification & checked		✓	✓

Originator - GCL Site Manager		Client Representative	
Name :	<u>ERIAL YMEH</u>	Name :	<u>KEVIN MURPHY</u>
Signature:		Signature:	
Date:	<u>23/2/21</u>	Date:	<u>16/2/21</u>

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

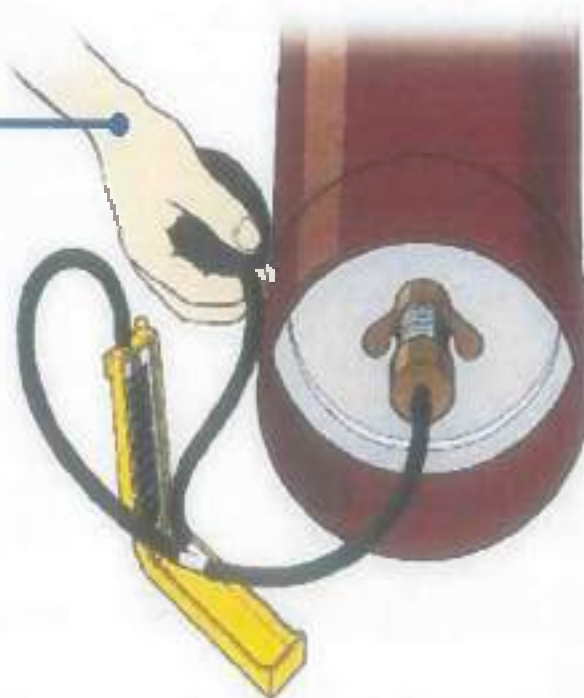
Client: <u>STW</u>	Test date: <u>27/2/21</u>
Drainage Check Sheet Ref no: <u>41</u>	Test Ref. No: <u>41</u>

Pipe Run	Air gauge pressure		Pipe dia. (ø)	Test Time	Result	Remarks
	Initial	Final				
Fw05 - Fw06	100	100	150	5 min	Good	
Fw06 - SS①	100	99	100	5 min	Good	
Fw06 - SUP①	100	100	100	5 min	Good	

Signed: (Technician)	Witnessed by: <u>STW</u>
Verified By: (Technical Manager) <u>[Signature]</u>	Date: <u>28/2/21</u>

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'V' gauge and hand bellows.
4. Fill 'V' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and the lower (red) below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe section is failing.





f206 + f205



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2 PROJECT NAME: Clarendon Road Phase

Manhole / Drainage run Check Sheet

Check Sheet No:		42		
Drg Ref & Rev no:		Biol 219		
No	Manhole & Drainage run construction	Details	Checked and Signed	
			GCL	Client
1	Location <u>DJ Fw04</u> Manhole/poe run Ref <u>Fw04</u> Grid line Ref <u>---</u> Highlighted location plan attached <u>(Yes/No)</u>		✓	✓
2	Manhole size <u>450Ø</u>		✓	✓
3	Invert level <u>24.100</u>		✓	X
4	Manhole cover : Spec. size, orientation & cover level <u>yes</u>		✓	✓
5	Excavation to correct dimensions/support systems checked		✓	✓
6	Branches & benching: position, line, level checked		✓	✓
7	Rocker pipes installed (if applicable) checked		✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓	✓
9	Brickwork & surround filled as per detail/specification checked.		✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type :		---	N/A
11	Manhole accessible for future use/maintenance <u>(Yes/No)</u>		✓	✓
12	Pipe run details <u>Fw04 - SVP1 / Fw04 - SRP3</u> <u>Fw04 - SVP2</u> Material <u>Asy / Cast iron</u> Diameter <u>150 / 100</u> Length <u>---</u>		✓	✓
13	Spurs for lateral connections: Position, level & co-ordinates checked		✓	✓
14	SVP/RWPs installed to correct position, level and capped off.		✓	✓
15	Anchor blocks to correct detail at specified locations		✓	✓
16	Bedding & surround as specified		✓	✓
17	Air testing passed/witnessed:		✓	X
18	Photos attached		✓	✓
19	Geotextile installed as per specification & checked		✓	✓

Originator - GCL Site Manager		Client Representative	
Name : <u>EMILIE MERR</u>	Name : <u>HELIAN MURPHY</u>		
Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>		
Date: <u>24/2/21</u>	Date: <u>16/6/21</u>		

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

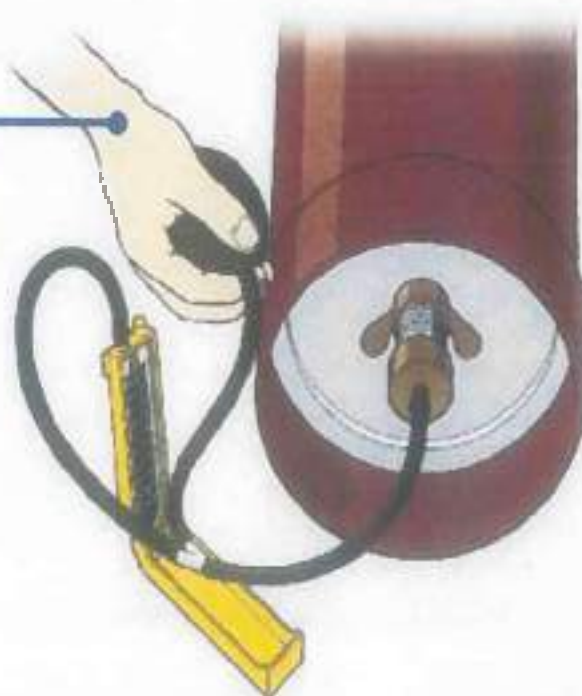
Client: <u>STW</u>	Test date: <u>24/2/21</u>
Drainage Check Sheet Ref no: <u>42</u>	Test Ref. No: <u>42</u>

Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
Fwy4 - SVP1	100	100	150	5 min	GOOD	
Fwy4 - SVP2	100	100	150	5 min	GOOD	
Fwy4 - SVP3	100	100	100	5 min	GOOD	

Signed: (Technician)	Witnessed by: <u>STW</u>
Verified By: (Technical Manager) <u>[Signature]</u>	Date: <u>24/2/21</u>

Air Test - Testing Guidelines

1. Seal pipe section with appropriate stop drain test plug.
Remove any grease or foreign material from installation prior. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'U' gauge and hand bellows.
4. Fill 'U' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and the lower limb below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe section is leaking.











D1 Fw04 → SVP



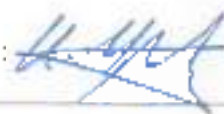
DA FW03 / SVP

PROJECT NAME: Clarendon Road Phase 2

Manhole / Drainage run Check Sheet

Check Sheet No: 43		Drg Ref & Rev no: 8101 09		
No	Manhole & Drainage run construction	Details	Checked and Signed	
			GCL	Client
1	Location D1 SW13 Manhole/pipe run Ref SW13 Gridline Ref — Highlighted location plan attached Yes/No	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
2	Manhole size 1200	✓	✓	✓
3	Invert level 22.050	✓	✓	X
4	Manhole cover : Spec, size, orientation & cover level	✓	✓	✓
5	Excavation to correct dimensions/support systems checked	✓	✓	✓
6	Branches & banching: position, line, level checked	✓	✓	✓
7	Rocker pipes installed (if applicable) checked	✓	✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.	✓	✓	✓
9	Brickwork & surround filled as per detail/specification checked.	✓	✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type : —	✓	✓	X
11	Manhole accessible for future use/maintenance Yes/No	✓	✓	✓
12	Pipe run details Material Clay Diameter 150 Length —	✓	✓	✓
13	Spurs for lateral connections: Position, level & co-ordinates checked	✓	✓	✓
14	SVP/RWPs installed to correct position, level and capped off.	✓	✓	N/A
15	Anchor blocks to correct detail at specified locations	✓	✓	✓
16	Bedding & surround as specified	✓	✓	✓
17	Air testing passed/witnessed:	✓	✓	X
18	Photos attached	✓	✓	✓
19	Geotextile installed as per specification & checked	✓	✓	✓

MISSING
Flow
CONTACTS

Originator - GCL Site Manager		Client Representative	
Name : ERNAI YHGERI	Name : KEVIN AWALIN		
Signature: 	Signature: 	Date: 24/2/21	Date: 16/6/21

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

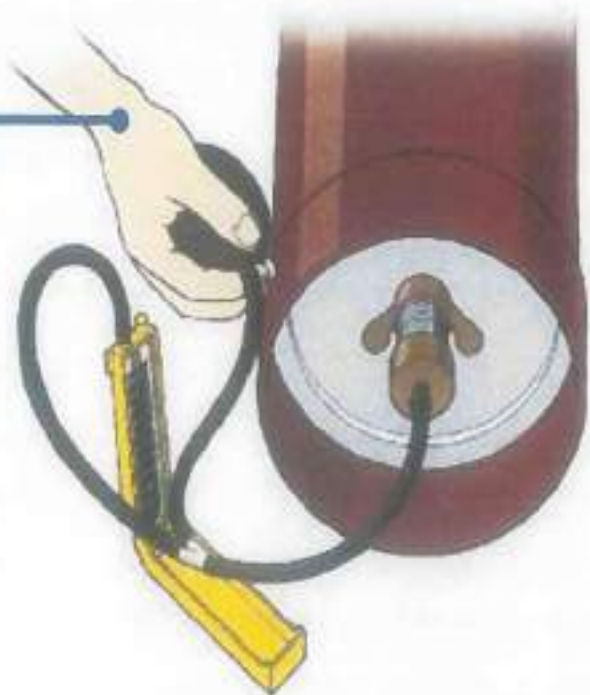
Client: <u>STW</u>	Test date: <u>24/2/21</u>
Drainage Check Sheet Ref no: <u>43</u>	Test Ref. No: <u>43</u>

Pipe Run	Air gauge pressure		Pipe dia.(w)	Test Time	Result	Remarks
	Initial	Final				
<u>SW13-SW04</u>	<u>100</u>	<u>100</u>	<u>150</u>	<u>5</u>	<u>Good</u>	

Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager) <u>[Signature]</u>	Date: <u>24/2/21</u>

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and gasket. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'U' gauge and hand bellows.
4. Fill 'U' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and the (upper) ink below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe section is failing.





Scale: 1:10,000

North Arrow

W

WATER

COAST GUARD

WATER

SEWERS

SEWERS

SEWERS

ROADS

ROADS

ROADS

RAILWAYS

RAILWAYS

RAILWAYS

POWER LINES

POWER LINES

POWER LINES

TELEPHONE LINES

TELEPHONE LINES

TELEPHONE LINES

OTHER

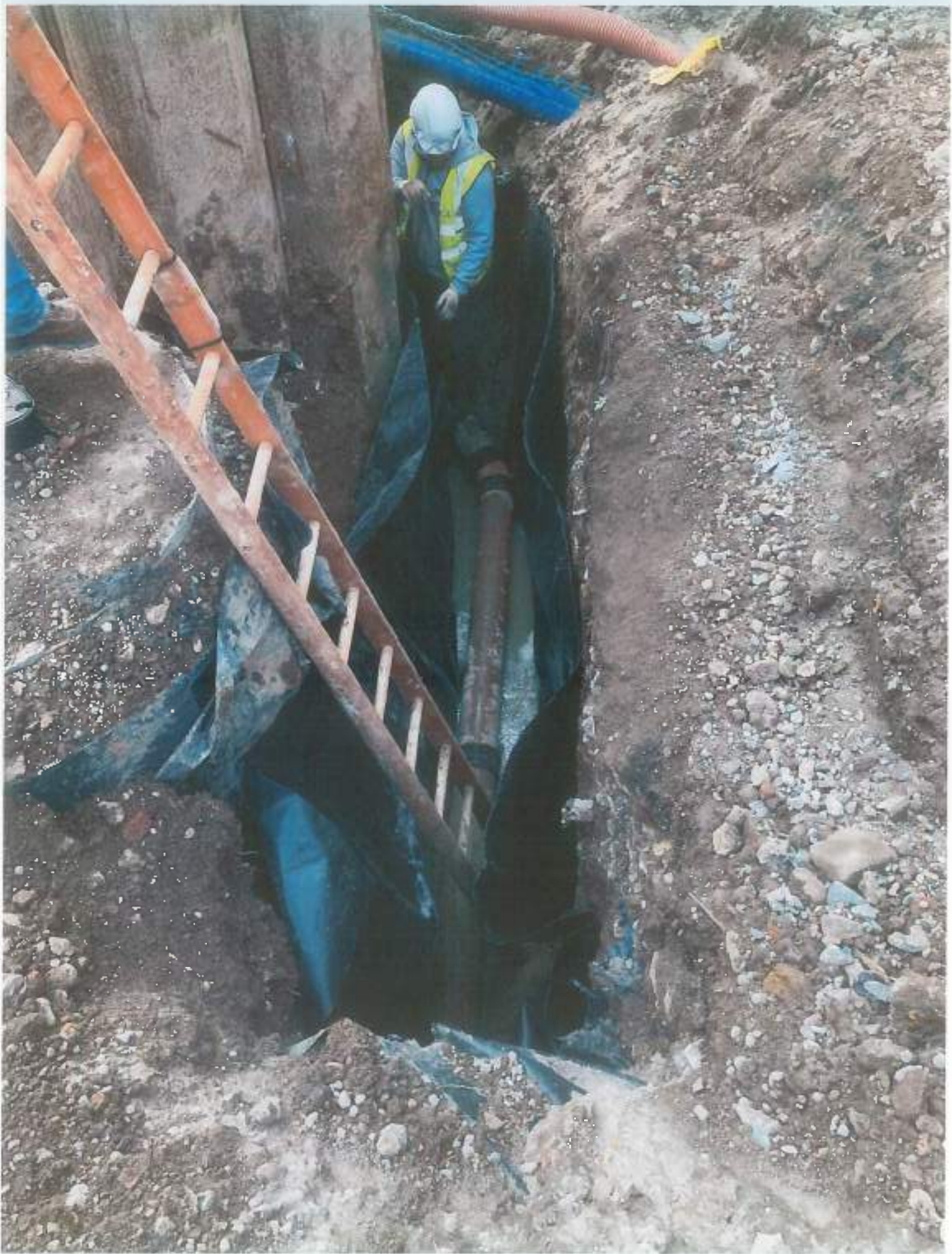
OTHER

OTHER

LEGEND

LEGEND

LEGEND



Sw13 - CONNECTION FROM SWMH14



SW13 - CONNECTION FROM SW14

PROJECT NAME: Clarendon Road PHASE 3A

Manhole / Drainage run Check Sheet

Check Sheet No:		47		
Drg Ref & Rev no:		8101 C / 8130 C / 8131 C		
No	Manhole & Drainage run construction	Details	Checked and Signed	
			GCL	Client
1	Location PHASE 3A	Manhole/pipe run Ref	✓	✓
		Gridline Ref		
		Highlighted location plan attached		
2	Manhole size	FW03A	✓	✓
3	Invert level	23.970m	✓	X
4	Manhole cover: Spec. size, orientation & cover level	24.664m, PAIC	✓	✓
5	Excavation to correct dimensions/support systems checked		✓	✓
6	Branches & benching: position, line, level checked		✓	✓
7	Rocker pipes installed (if applicable) checked		✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓	✓
9	Brickwork & surround filled as per detail/specification checked.		✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type :		N/A	N/A
11	Manhole accessible for future use/maintenance		✓	✓
12	Pipe run details	Material	✓	✓
	iron rest to clay	Diameter		
		Length		
13	Spurs for lateral connections: Position level & co-ordinates checked		✓	✓
14	SVP/RWPs installed to correct position, level and capped off.		✓	✓
15	Anchor blocks to correct detail at specified locations		✓	✓
16	Bedding & surround as specified		✓	✓
17	Air testing passed/witnessed:		✓	✓
18	Photos attached		✓	✓
19	Geotextile installed as per specification & checked		✓	✓

Originator - GCL Site Manager		Client Representative	
Name : EMMAN YMER	Name : KEVIN NUNLEY		
Signature:	Signature:		
Date: 17/3/21	Date: 16/6/21		

PROJECT NAME: CLARENDON ROAD

Drainage Air Test Sheet

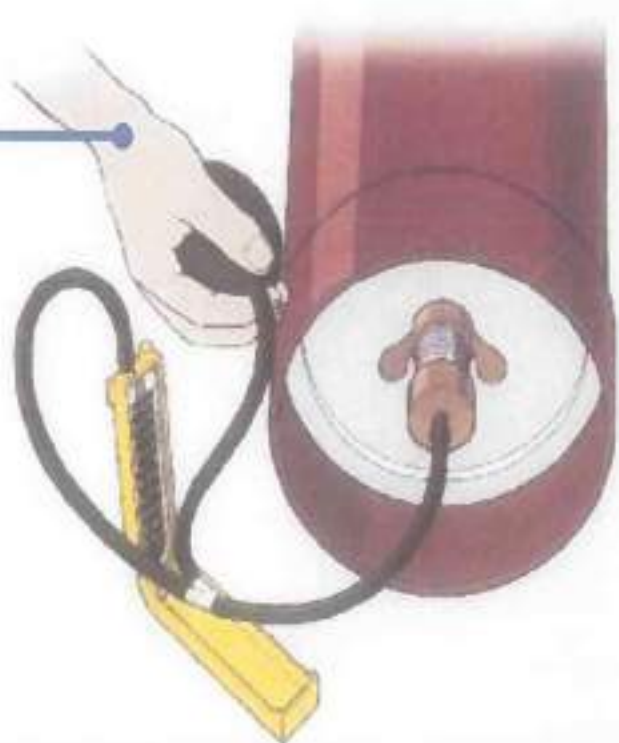
Client: <u>STW</u>	Test date: <u>17/3/21</u>
Drainage Check Sheet Ref no: <u>47</u>	Test. Ref. No: <u>47</u>

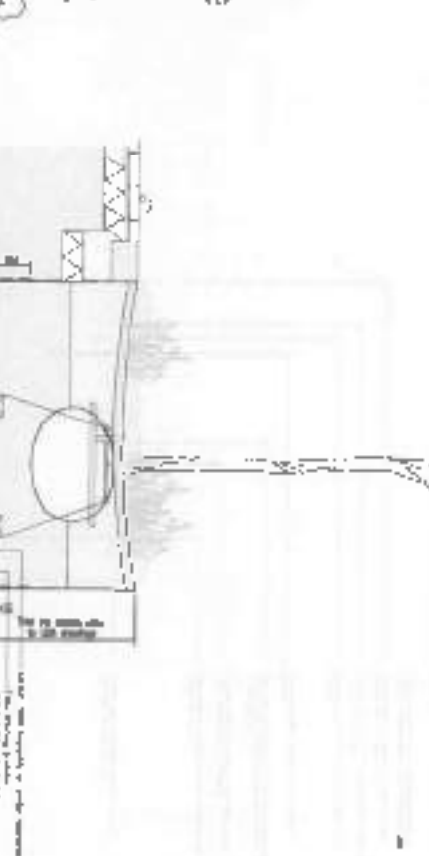
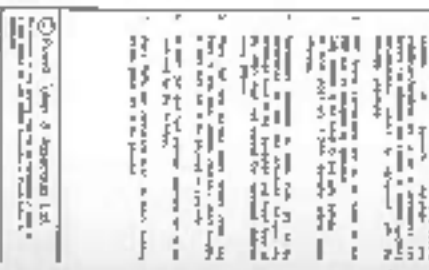
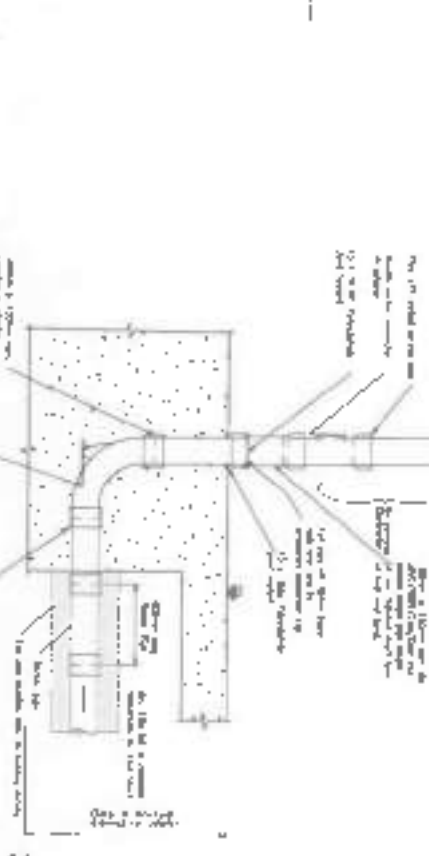
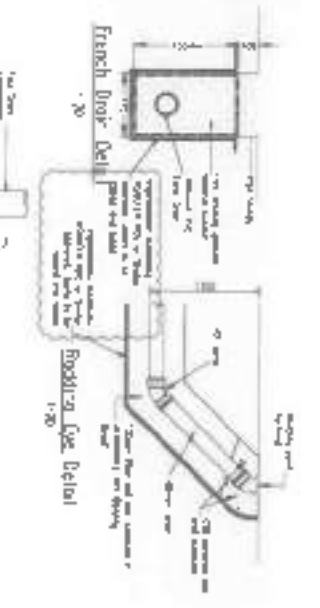
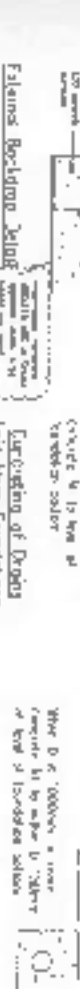
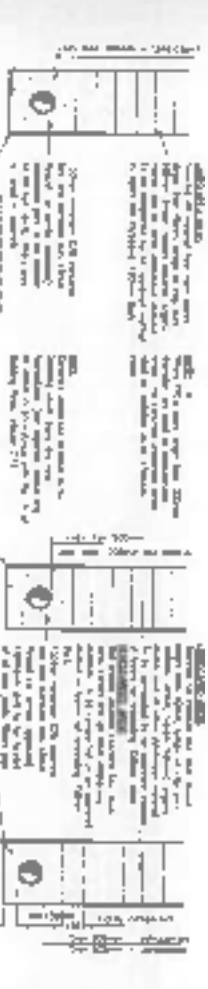
Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
RWP1 - FW09A	100	100	150	5 min	Good	

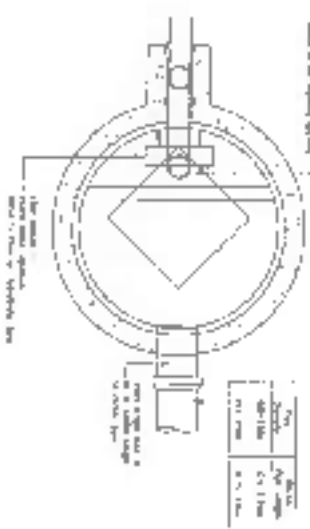
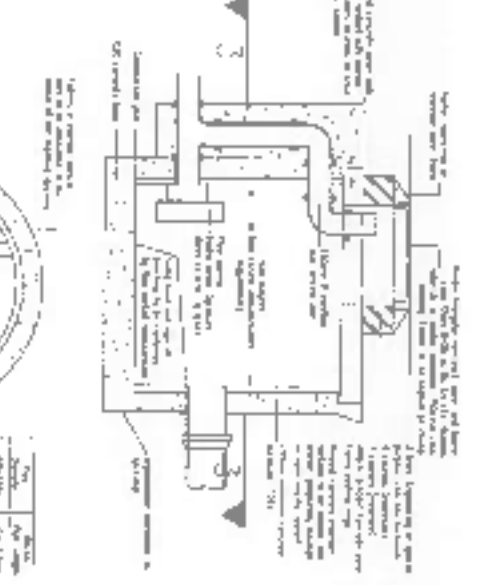
Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager) 	Date: <u>17/3/21</u>

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall, ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via T piece to nipple, V gauge and hand bellows.
4. Fill V gauge with water to 100mm.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and the lower limb below zero on the closed side. The levels should not fall to less than 25mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 25mm within the specified time the pipe section is leaking.

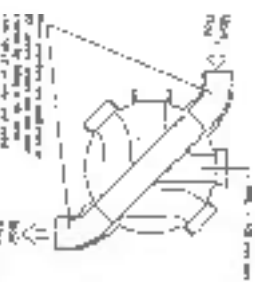






Section 2.2
Physical Hydroclimatic, Geologic, Morphologic, Vegetation

^a Determined by ¹H NMR in CDCl₃. ^b Determined by ¹³C NMR in CDCl₃. ^c Determined by IR spectroscopy. ^d Determined by mass spectrometry. ^e Determined by elemental analysis.



Polyethylene, by Graham Chamberlain, p. 67-70



Section 5: Evaluation

FOR CONSTRUCTION

[illegible]





PROJECT NAME: Clarendon Road Phase 3

Manhole / Drainage run Check Sheet

Check Sheet No: 48		Org Ref & Rev no: 8101- C19		
No	Manhole & Drainage run construction	Details	Checked and Signed	
			GCL	Client
1	Location <u>DL SWMH 12</u> Manhole/pipe run Ref <u>SWMH 12-SW15</u> Gridline Ref <u>-</u> Highlighted location plan attached <u>Yes/No</u>		✓	✓
2	Manhole size <u>100 / 450</u>		✓	✓
3	Invert level <u>22.700</u>		✓	X
4	Manhole cover : Spec, size, orientation & cover level		✓	✓
5	Excavation to correct dimensions/support systems checked		✓	✓
6	Branches & benching: position, line, level checked		✓	✓
7	Rocker pipes installed (if applicable) checked		✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓	✓
9	Brickwork & surround filled as per detail/specification checked.		✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type		N/A	X
11	Manhole accessible for future use/maintenance	Yes/No	✓	✓
12	Pipe run details Material <u>Clay</u> Diameter <u>100</u> Length <u>-</u>		✓	✓
13	Spurs for lateral connections: Position, level & co-ordinates checked		✓	✓
14	SVP/RWPs installed to correct position, level and capped off.		✓	N/A
15	Anchor blocks to correct detail at specified locations		✓	✓
16	Berking & surround as specified		✓	✓
17	Air testing passed/witnessed:		✓	X
18	Photos attached		✓	✓
19	Geotextile installed as per specification & checked		✓	✓

MINI
FLOW
TESTING

Originator - GCL Site Manager		Client Representative	
Name : <u>EMMA YMER</u>	Name : <u>KEVIN MURPHY</u>	Signature: <u>[Signature]</u>	Signature: <u>[Signature]</u>
Date: <u>18/3/21</u>	Date: <u>16/6/21</u>		

GCL-QA-002

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

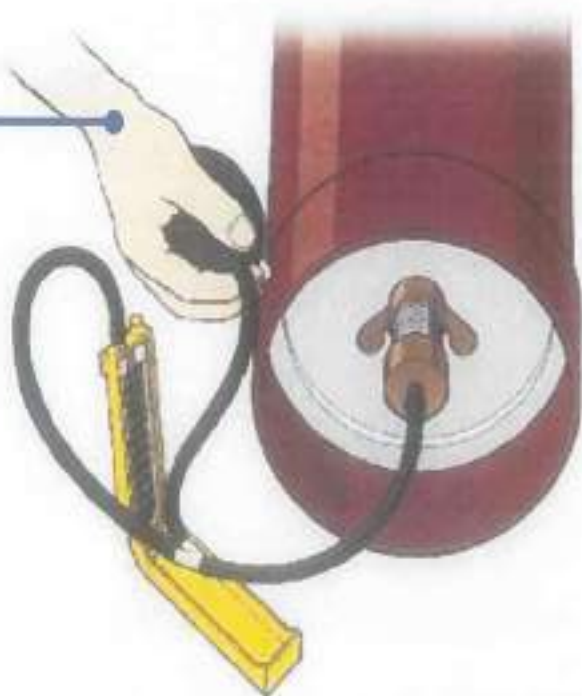
Client: St. William	Test date: 18/3/21
Drainage Check Sheet Ref no: 48	Test Ref. No: 48

Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
SWH412-SW15	100	100	100	5min	Good	

Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager) 	Date: 18/3/21

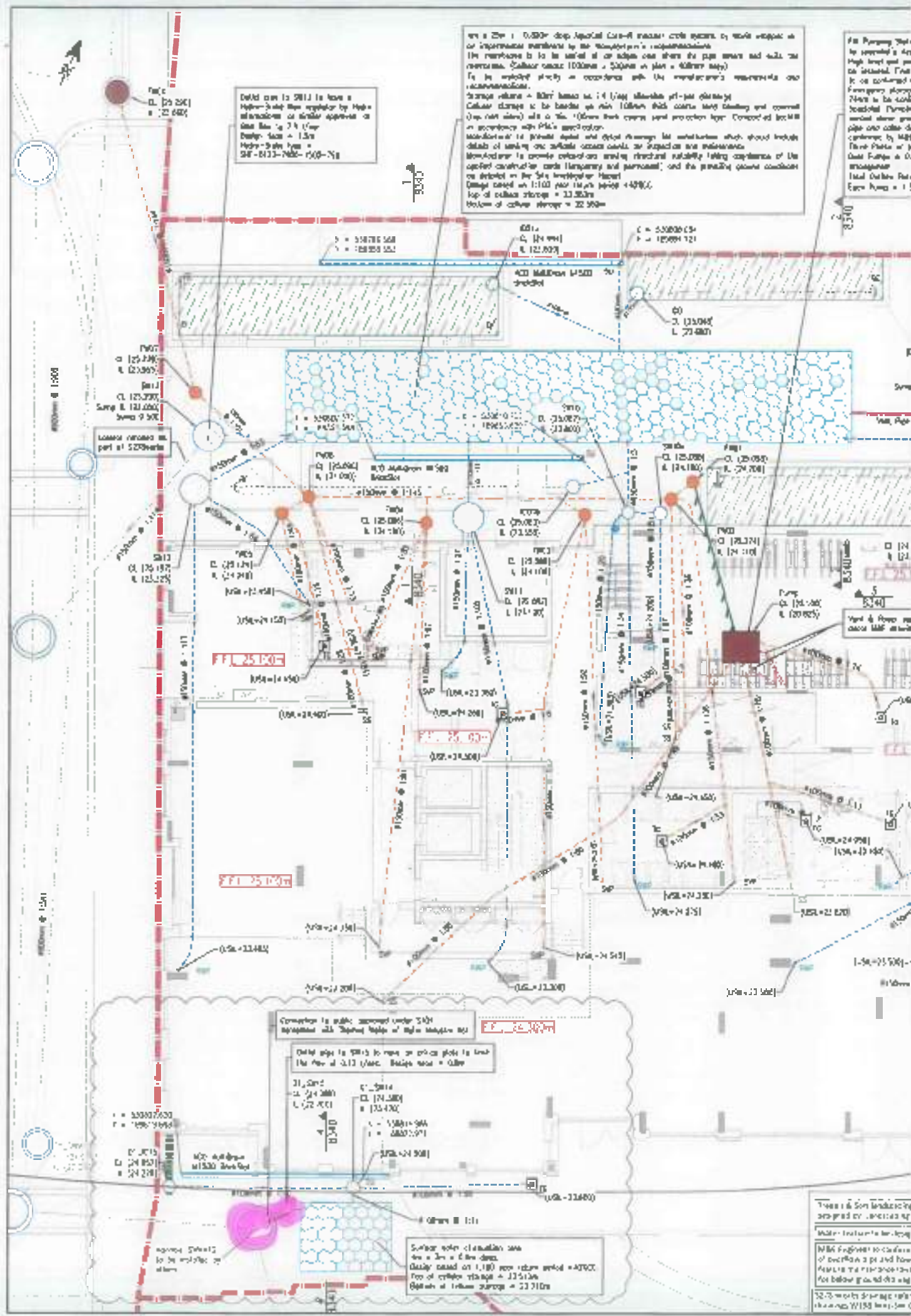
Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from insulation prior. Ensure no debris trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'T' piece to nipple, 'W' gauge and hand bellows.
4. Fill 'W' gauge with water to zero.
5. Squeeze the hand bellows gently until the level reaches 100mm on the pressure side of the gauge and the level is 100mm below zero on the drained side. The level should not fall to less than 100mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 100mm within the specified time the pipe section is leaking.





SW15 - SWMH12



PROJECT NAME: Clarendon Road Phase 3

Manhole / Drainage run Check Sheet

		Check Sheet No:	49	
		Drg Ref & Rev no:		
No	Manhole & Drainage run construction	Details	Checked and Signed	
			GCL	Client
1	Location <u>D1 Pumping station</u> Manhole/pipe run Ref <u>See attached</u> Gridline Ref <u> </u> Highlighted location plan attached <u>Yes/No</u>		✓	✓
2	Manhole size <u>Pumping Station</u>		✓	✓
3	Invert level <u>20.825</u>		✓	X
4	Manhole cover : Spec, size, orientation & cover level		✓	✓
5	Excavation to correct dimensions/support systems checked		✓	✓
6	Branches & benching: position, line, level checked		✓	✓
7	Rocker pipes installed (if applicable) checked		✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓	✓
9	Brickwork & surround filled as per detail/specification checked.		✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type <u> </u>		N/A	N/A
11	Manhole accessible for future use/maintenance <u>Yes/No</u>		✓	✓
12	Pipe run details Material <u>Cast Iron</u> Diameter <u>600 / 1000</u> Length <u> </u>		✓	✓
13	Spurs for lateral connections: Position, level & co-ordinates checked		✓	✓
14	SVP/RWPs installed to correct position, level and capped off.		✓	✓
15	Anchor blocks to correct detail at specified locations		✓	✓
16	Bedding & surround as specified		✓	✓
17	Air testing passed/witnessed:		✓	X
18	Photos attached		✓	✓
19	Geotextile installed as per specification & checked		✓	✓

Originator - GCL Site Manager		Client Representative	
Name :	<u>ERNAI YMERI</u>	Name :	<u>Wenbin Murphy</u>
Signature:		Signature:	
Date:	<u>8/1/21</u>	Date:	<u>16/6/21</u>

GCL-QA-002

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

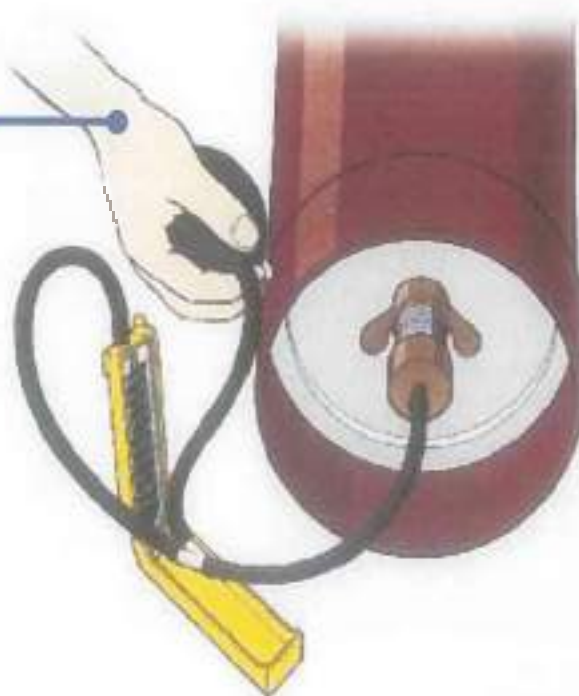
Client: St. William	Test date: 8/1/21
Drainage Check Sheet Ref no: 49	Test Ref. No: 49

Pipe Run	Air gauge pressure		Pipe dia. (ø)	Test Time	Result	Remarks
	Initial	Final				
P.S. → vent	100	100	100ø	5min	Good	
P.S. → SS ①	100	100	100ø	5min	Good	
P.S. → SS ②	100	100	100ø	5min	Good	
P.S. → T&G ①	100	100	100ø	5min	Good	
P.S. → T&G ②	100	100	100ø	5min	Good	
P.S. → T&G ③	100	100	100ø	5min	Good	

Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager)	Date: 8/1/21

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via "T" piece to nipple, "U" gauge and hand bellows.
4. Fill "U" gauge with water to "zero".
5. Squeeze the hand bellows gently until the level reaches 100mm on the up scale of the gauge and the lower limb below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe requires testing.



















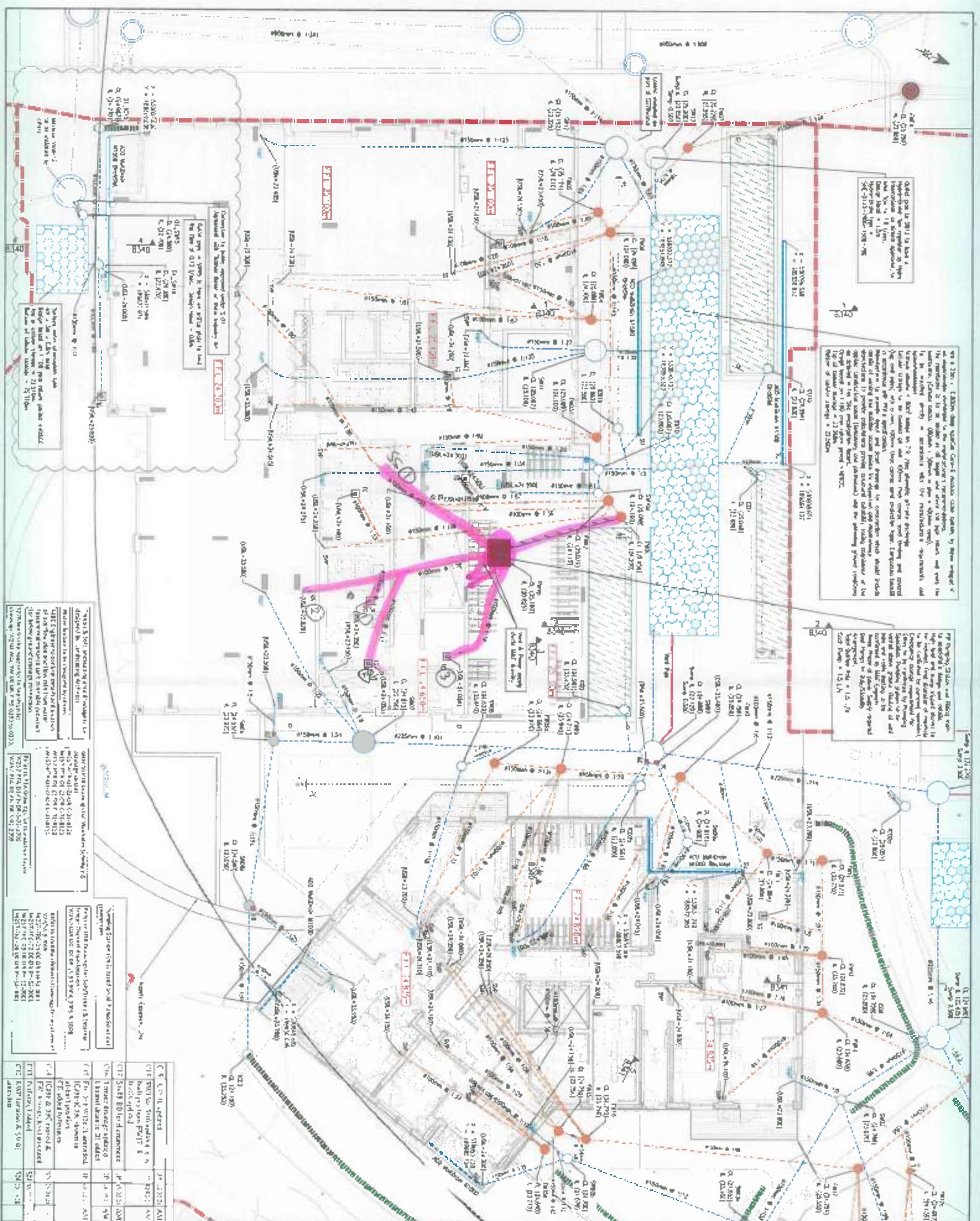


DJ SS Prefabricating S



D1 Pumping station -> TG/TG/SS





Order from the 2011 to have a
highlight of the register to help
transmission of the system, the
and the 18 (1/11).
Order from the 18
Order from the 18
Order from the 18

[illegible][illegible]

“The 1501 parchment fragment is being displayed by the British Library.”

[illegible][illegible]

FOR CONSTRUCTION

- [illegible]

Notes:

PROJECT NAME: Clarendon Road Phase 2 PHASE-3

16th APRIL 2021

Manhole / Drainage run Check Sheet

Check Sheet No:		50			
Drg Ref & Rev no:		8101 C-19			
No	Manhole & Drainage run construction	Details	Checked and Signed		
			GCL	Client	
1	Location Manhole/pipe run Ref SWD9-SW05 Gridline Ref Highlighted location plan attached Yes/No		✓	✓	
2	Manhole size	Ø 1200	—	N/A	
3	Invert level	22.720	✓	X	
4	Manhole cover : Spec. size, orientation & cover level	—	—	N/A	
5	Excavation to correct dimensions/support systems checked	Yes	✓	✓	
6	Branches & benching: position, line, level checked	—	—	N/A	
7	Rocker pipes installed (if applicable) checked	—	—	N/A	
8	Rings and cover placed as per vertical & horizontal alignment checked.	—	—	N/A	
9	Brickwork & surround filled as per detail/specification checked.	—	—	N/A	
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type :	—	—	N/A	
11	Manhole accessible for future use/maintenance	Yes/No	—	N/A	
12	Pipe run details Material Clay Pipe Diameter 225MM Ø Length 		✓	✓	
13	Spurs for lateral connections: Position, level & co-ordinates checked	—	✓	✓	
14	SVP/RWPs installed to correct position, level and capped off.	—	✓	✓	
15	Anchor blocks to correct detail at specified locations	—	✓	✓	
16	Bedding & surround as specified	—	✓	✓	
17	Air testing passed/witnessed:	—	✓	X	
18	Photos attached	—	✓	✓	
19	Geotextile installed as per specification & checked	—	✓	✓	

Originator - GCL Site Manager		Client Representative	
Name : ERMA WERN	Name : KEITH MURPHY		
Signature:	Signature:		
Date: 16/5/21	Date: 16/6/21		

GCL-QA-002

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

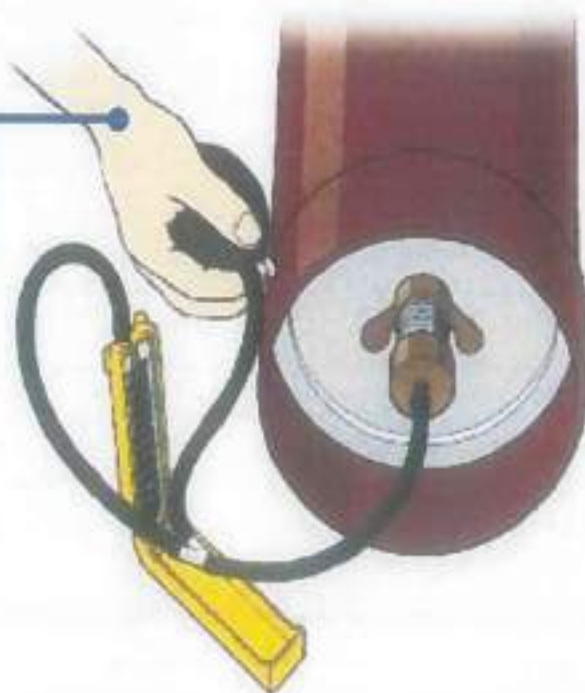
Client: <u>STW</u>	Test date: <u>16/5/21</u>
Drainage Check Sheet Ref no: <u>50</u>	Test Ref. No: <u>50</u>

Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
SW09 → SW	100	100	100ø	5 min	GOOD	
SW09 → RWP	100	100	150ø	5 min	GOOD	
SW09 → SW05	100	100	150ø	5 min	GOOD	

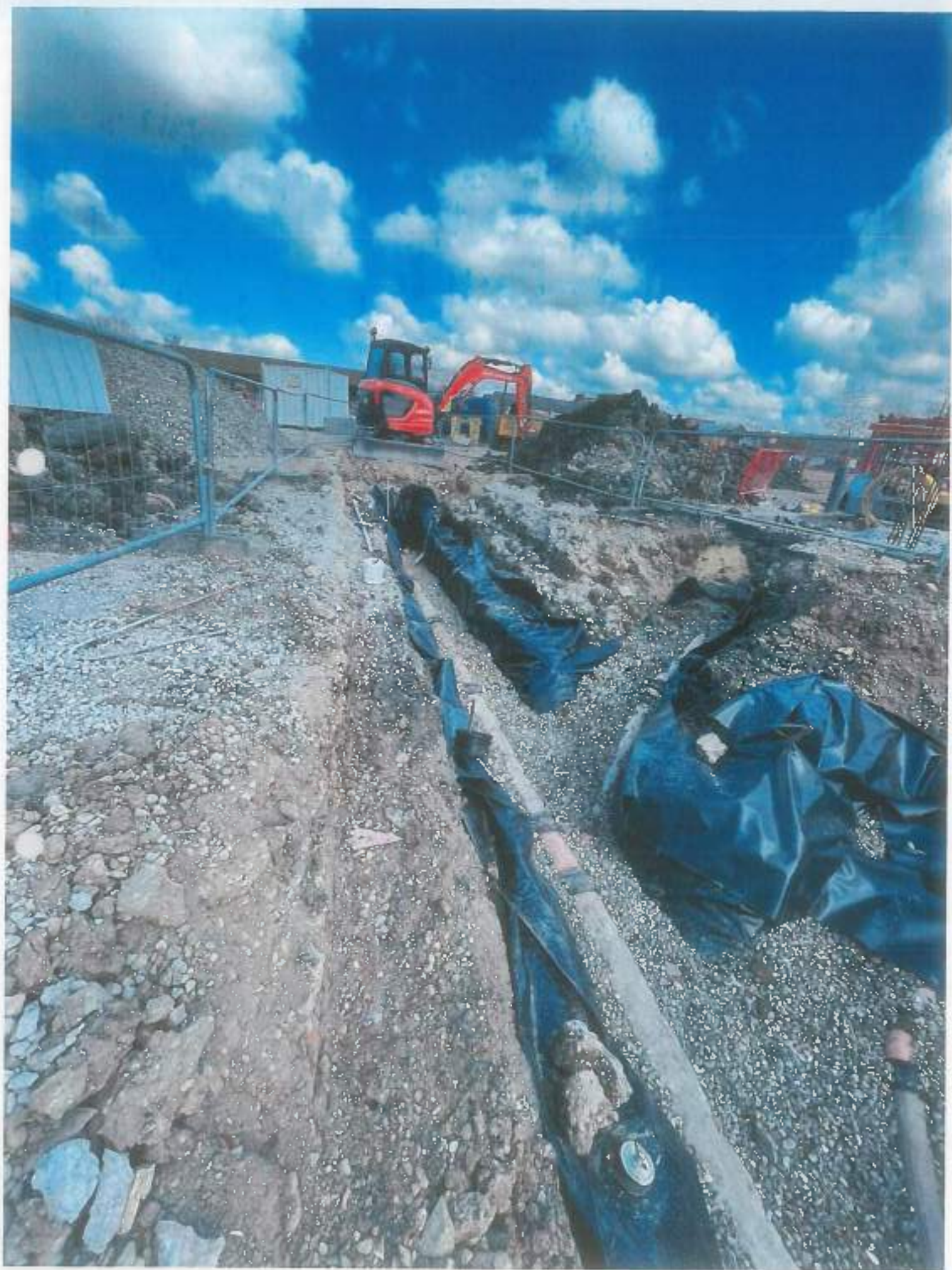
Signed: _____	Witnessed by: _____
(Technician) _____	
Verified By: <u>[Signature]</u>	Date: <u>16/5/21</u>
(Technical Manager)	

Air Test - Testing Guidelines

1. Seal pipe junction with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and venting cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'V' gauge and hand bellows.
4. Fill 'V' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and the lower ring below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe section is leaking.









PROJECT NAME: Clarendon Road Phase 2 Phase - 3

19th April 2021

Manhole / Drainage run Check Sheet

Check Sheet No:		51	
Drg Ref & Rev no:		B101 C-19	
No	Manhole & Drainage run construction	Details	Checked and Signed
			GCL Client
1	Location Manhole/pipe run Ref Grid line Ref Highlighted location plan attached	M11015 - D125014 Yes/No	✓ ✓
2	Manhole size		✓ ✓
3	Invert level	24.264 / 23.474	✓ X
4	Manhole cover: Spec, size, orientation & cover level		✓ ✓
5	Excavation to correct dimensions/support systems checked		✓ ✓
6	Branches & bonching: position, line, level checked		✓ ✓
7	Rocker pipes installed (if applicable) checked		✓ ✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓ ✓
9	Brickwork & surround filled as per detail/specification checked.		✓ ✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type:		N/A N/A
11	Manhole accessible for future use/maintenance	Yes/No	✓ ✓
12	Pipe run details Material Diameter Length	Clay Pipe 100MM Ø	✓ ✓
13	Spurs for lateral connections: Position, level & co-ordinates checked		✓ ✓
14	SVP/RWPs installed to correct position, level and capped off.		✓ N/A
15	Anchor blocks to correct detail at specified locations		✓ ✓
16	Bedding & surround as specified		✓ ✓
17	Air testing passed/witnessed:		✓ X
18	Photos attached		✓ ✓
19	Geotextile installed as per specification & checked		✓ ✓

Originator - GCL Site Manager Name : <u>CHRISTIAN</u> Signature: <u>[Signature]</u> Date: <u>19/5/21</u>	Client Representative Name : <u>HEATHER MURPHY</u> Signature: <u>[Signature]</u> Date: <u>16/6/21</u>
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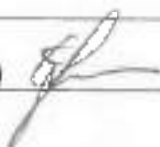
GCL-QA-002

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

Client: <u>STW</u>	Test date: <u>19/5/21</u>
Drainage Check Sheet Ref no: <u>51</u>	Test Ref. No: <u>51</u>

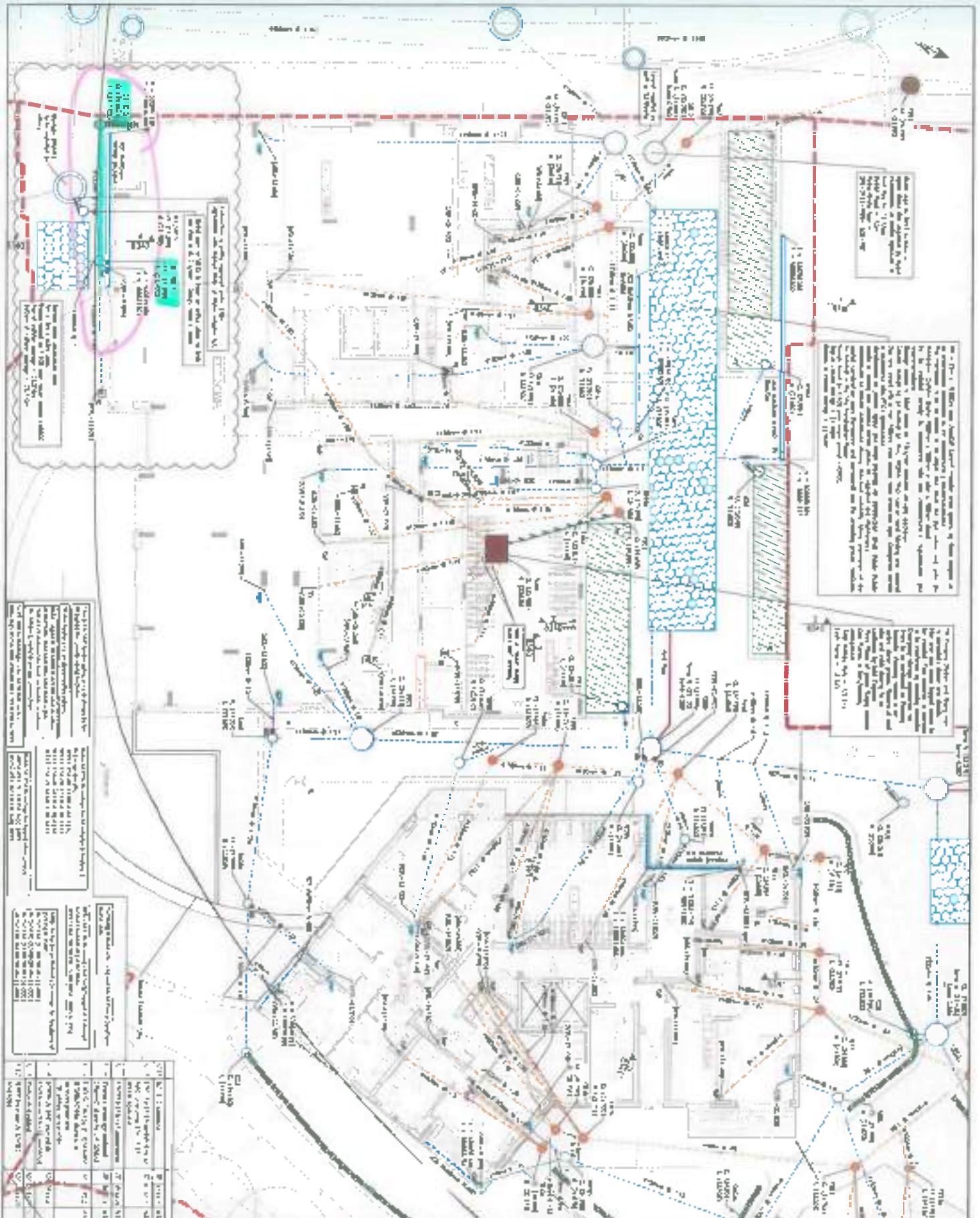
Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
D1.1615-D1-SW4	100	100	100ø	5min	Good	

Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager) 	Date: <u>19/5/21</u>

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Remove any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'U' gauge and hand bellows.
4. Fill 'U' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and thereafter 100mm below zero on the closed side. The level should not fall to less than 75mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 75mm within the specified time the pipe section is leaking.





1. The site plan shows the layout of the building and the surrounding landscape. The building is located in the center of the site, and the surrounding landscape is designed to provide a pleasant environment for the building's occupants. The landscape design includes a variety of trees, shrubs, and other plants, as well as a network of paths and walkways. The design also takes into account the building's orientation and the surrounding context, ensuring that the building and its landscape are integrated into the overall site plan.

2. The site plan also shows the location of the building's entrance and the surrounding parking areas. The entrance is located on the north side of the building, and the parking areas are located to the east and south of the building. The design ensures that the entrance and parking areas are easily accessible and provide a convenient environment for the building's occupants.

3. The site plan includes a detailed schedule of materials and dimensions for the building and its landscape. This schedule provides a clear and concise summary of the project's requirements, ensuring that all parties involved in the project are aware of the design's details and can work together to ensure its successful implementation.

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FOR CONSTRUCTION

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Drainage Layout

Sheet 1 of 3

1. The drainage layout shows the location of the building's drainage system and the surrounding landscape. The drainage system is designed to collect and remove rainwater from the building and its surrounding areas, ensuring that the building and its landscape remain dry and free from water damage. The design also takes into account the building's orientation and the surrounding context, ensuring that the drainage system is integrated into the overall site plan.

2. The drainage layout also shows the location of the building's entrance and the surrounding parking areas. The entrance is located on the north side of the building, and the parking areas are located to the east and south of the building. The design ensures that the entrance and parking areas are easily accessible and provide a convenient environment for the building's occupants.

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Drainage Layout

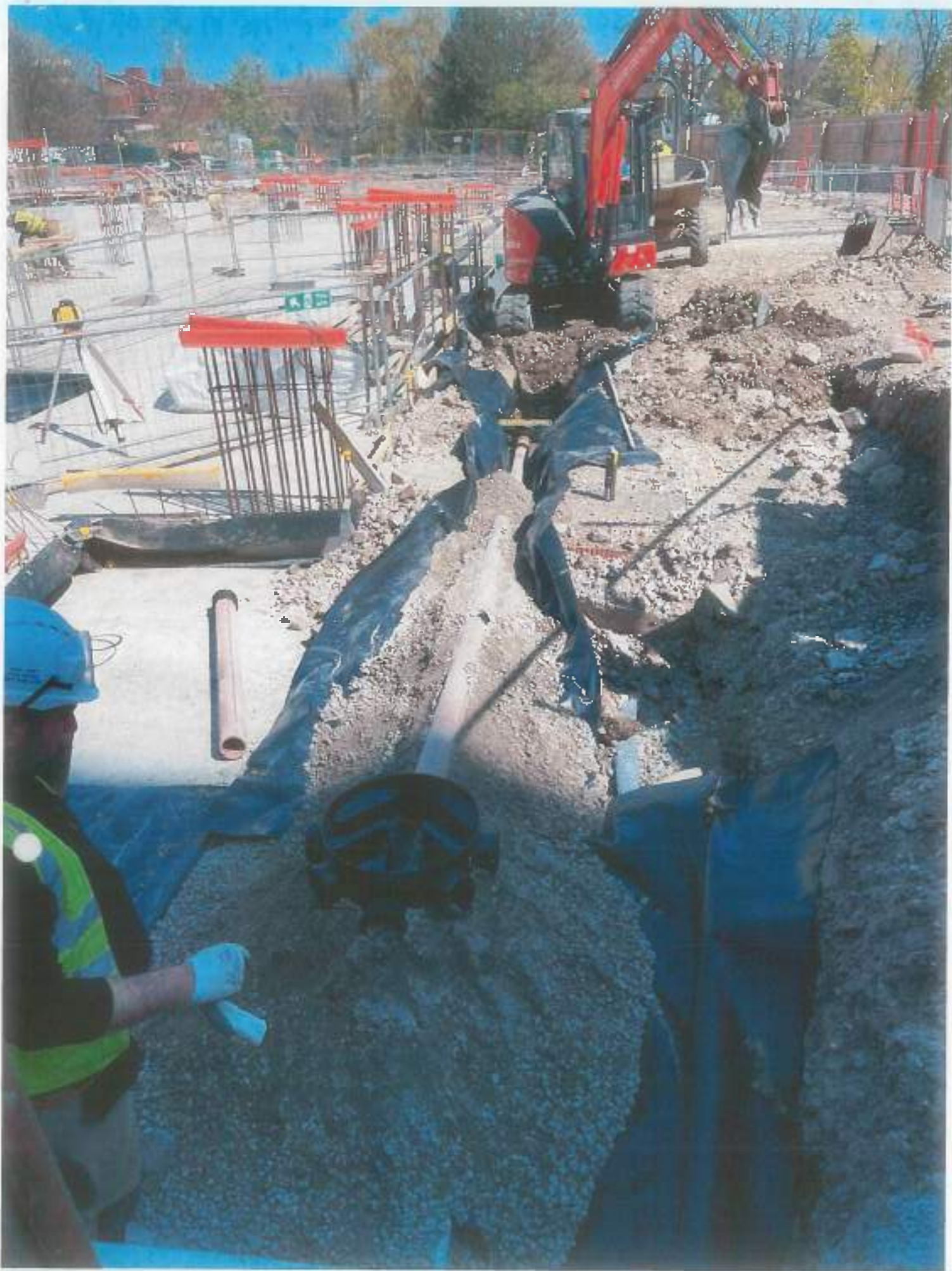
Sheet 1 of 3

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PROJECT NAME: Clarendon Road Phase 3

Manhole / Drainage run Check Sheet

Check Sheet No: <u>52</u>			
Drg Ref & Rev no: <u>8101 C-19</u>			
No	Manhole & Drainage run construction	Details	Checked and Signed
			GCL Client
1	Location <u>D1- Fw07 - Fw06</u> Manhole/pipe run Ref <u>Fw07 - Fw06</u> Gridline Ref <u>-</u> Highlighted location plan attached <u>Yes/No</u>		✓ ✓
2	Manhole size	<u>450 φ</u>	✓ ✓
3	Invert level	<u>24.000/23.955</u>	✓ X
4	Manhole cover : Spec, size, orientation & cover level		✓ ✓
5	Excavation to correct dimensions/support systems checked		✓ ✓
6	Branches & benching: position, line, level checked		✓ ✓
7	Rocker pipes installed (if applicable) checked		✓ ✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓ ✓
9	Brickwork & surround filled as per detail/specification checked.		✓ ✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type :		N/A N/A
11	Manhole accessible for future use/maintenance	<u>Yes/No</u>	✓ ✓
12	Pipe run details Material <u>Clay</u> Diameter <u>150 mm</u> Length <u>-</u>		✓ ✓
13	Spurs for lateral connections: Position, level & co-ordinates checked		✓ ✓
14	SVP/RWPs installed to correct position, level and capped off.		✓ ✓
15	Anchor blocks to correct detail at specified locations		✓ ✓
16	Bedding & surround as specified		✓ ✓
17	Air testing passed/witnessed: <u>STW</u>		✓ X
18	Photos attached		✓ ✓
19	Geotextile installed as per specification & checked		✓ ✓

Originator - GCL Site Manager	Client Representative
Name : <u>ERUAL YAGER</u>	Name : <u>KEVIN MURPHY</u>
Signature: <u>[Signature]</u> Date <u>25/5/21</u>	Signature: <u>[Signature]</u> Date: <u>16/6/21</u>

PROJECT NAME: Clarendon Road Phase 3

Drainage Air Test Sheet

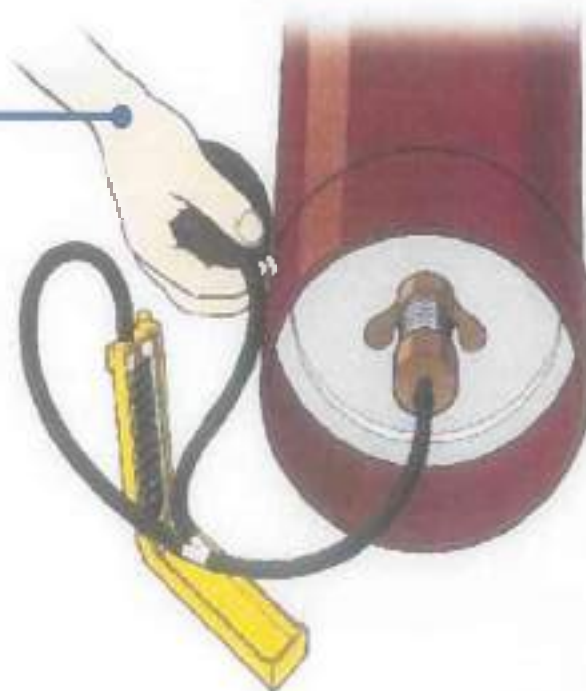
Client: St. William	Test date: 25/5/21
Drainage Check Sheet Ref no: 52	Test. Ref. No: 52

Pipe Run	Air gauge pressure		Pipe dia. (ø)	Test Time	Result	Remarks
	Initial	Final				
FW07 - FW06	100	100	150ø	5 min	Good	

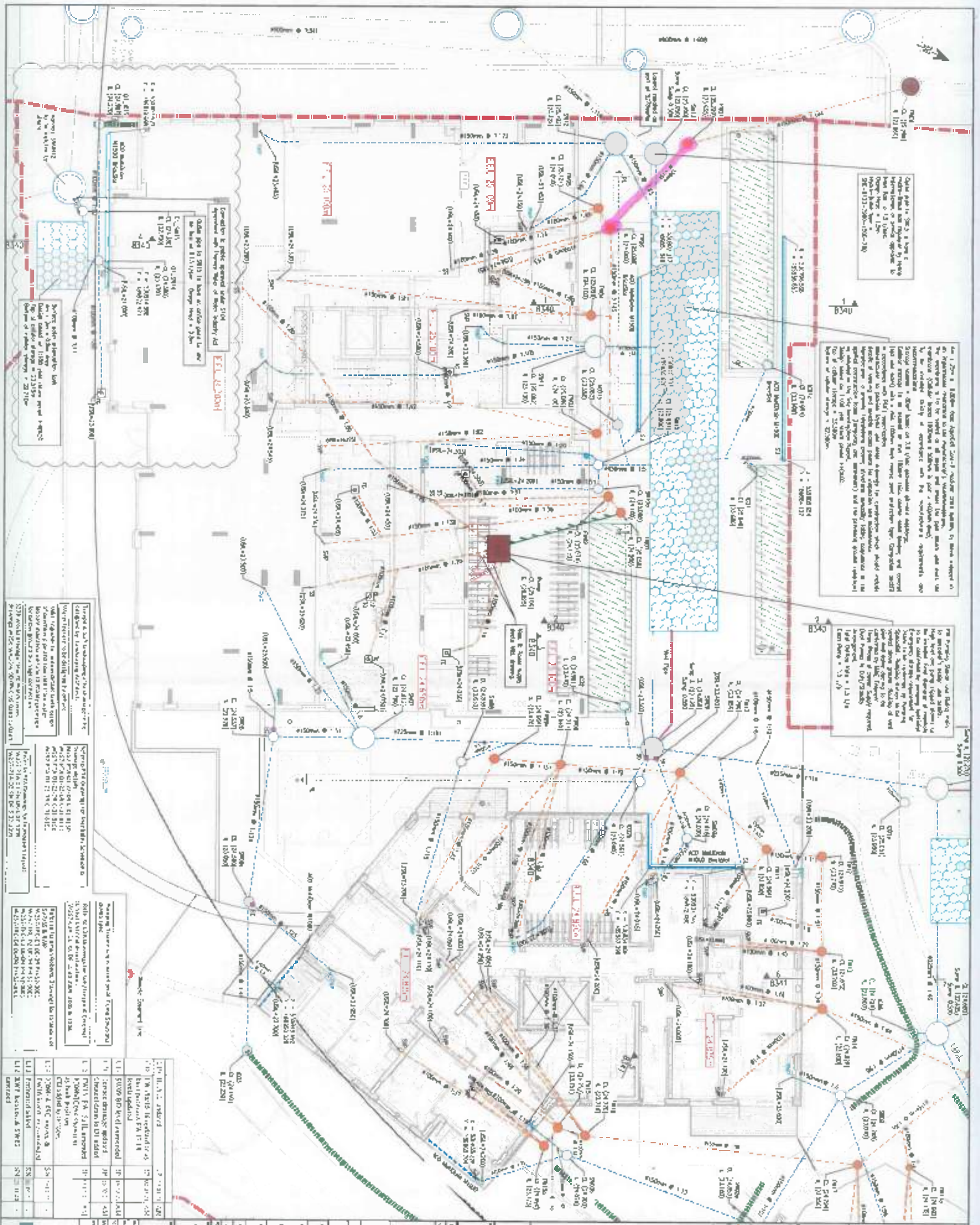
Signed: (Technician)	Witnessed by:
Verified By: (Technical Manager) <i>[Signature]</i>	Date: 25/5/21

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Removes any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall. Ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'Y' piece to nipple, 'U' gauge and hand bellows.
4. Fill 'U' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 800mm on the open side of the gauge and the (same time) below zero on the closed side. The level is held out left to less than 25mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 25mm within the specified time the pipe section is leaking.







Notes:

1. The drainage system is designed to collect and convey rainwater from the site to the street. It is designed to handle a maximum of 100mm of rain in a 24-hour period. The system is designed to be self-cleaning and to prevent blockages. The system is designed to be safe and secure. The system is designed to be durable and long-lasting. The system is designed to be easy to maintain. The system is designed to be cost-effective. The system is designed to be environmentally friendly. The system is designed to be aesthetically pleasing. The system is designed to be safe for children and pets. The system is designed to be safe for the public. The system is designed to be safe for the environment. The system is designed to be safe for the future. The system is designed to be safe for the world.

Notes:

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Notes:

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FOR CONSTRUCTION

Item	Description	Quantity	Unit	Price
1	Excavation and backfill	100	m³	100.00
2	Concrete drainage pipe	100	m	10.00
3	Concrete drainage manhole	10	nos	100.00
4	Concrete drainage catchpit	10	nos	100.00
5	Concrete drainage channel	100	m	10.00
6	Concrete drainage grate	100	nos	10.00
7	Concrete drainage cover	100	nos	10.00
8	Concrete drainage frame	100	nos	10.00
9	Concrete drainage base	100	nos	10.00
10	Concrete drainage wall	100	m²	10.00
11	Concrete drainage floor	100	m²	10.00
12	Concrete drainage roof	100	m²	10.00
13	Concrete drainage stairs	100	m²	10.00
14	Concrete drainage ramp	100	m²	10.00
15	Concrete drainage slope	100	m²	10.00
16	Concrete drainage curve	100	m²	10.00
17	Concrete drainage junction	100	m²	10.00
18	Concrete drainage intersection	100	m²	10.00
19	Concrete drainage crossing	100	m²	10.00
20	Concrete drainage underpass	100	m²	10.00
21	Concrete drainage overpass	100	m²	10.00
22	Concrete drainage bridge	100	m²	10.00
23	Concrete drainage tunnel	100	m²	10.00
24	Concrete drainage culvert	100	m²	10.00
25	Concrete drainage ditch	100	m²	10.00
26	Concrete drainage gully	100	m²	10.00
27	Concrete drainage drain	100	m²	10.00
28	Concrete drainage sewer	100	m²	10.00
29	Concrete drainage stormwater	100	m²	10.00
30	Concrete drainage wastewater	100	m²	10.00
31	Concrete drainage effluent	100	m²	10.00
32	Concrete drainage effluent	100	m²	10.00
33	Concrete drainage effluent	100	m²	10.00
34	Concrete drainage effluent	100	m²	10.00
35	Concrete drainage effluent	100	m²	10.00
36	Concrete drainage effluent	100	m²	10.00
37	Concrete drainage effluent	100	m²	10.00
38	Concrete drainage effluent	100	m²	10.00
39	Concrete drainage effluent	100	m²	10.00
40	Concrete drainage effluent	100	m²	10.00

pta

Drainage Layout

Sheet 1 of 3

W25-57A-200-22-100-C-1-R161

PROJECT NAME: Clarendon Road Phase 3a

Manhole / Drainage run Check Sheet

		Check Sheet No:	53	
		Dwg Ref & Rev no	8101 C19	
No	Manhole & Drainage run construction	Details	Checked and Signed GCL Client	
1	Location DI-SW14 run to TG Manhole/pipe run Ref Gridline Ref Highlighted location plan attached	SW14 to TG Yes/No	✓	✓
2	Manhole size	450 Ø	✓	✓
3	Invert level	23.470	✓	X
4	Manhole cover : Spec, size, orientation & cover level	✓	✓	✓
5	Excavation to correct dimensions/support systems checked		✓	✓
6	Branches & benching: position, line, level checked		✓	✓
7	Rocker pipes installed (if applicable) checked		✓	✓
8	Rings and cover placed as per vertical & horizontal alignment checked.		✓	✓
9	Brickwork & surround filled as per detail/specification checked.		✓	✓
10	All Specials are fixed (Non return valve, Flow control unit, Traps, Rodent barrier, etc.) Specify Type :		✓	N/A
11	Manhole accessible for future use/maintenance		✓	✓
12	Pipe run details Material Diameter Length	Clay 100 mm	✓	✓
13	Spurs for lateral connections: Position level & co-ordinates checked		✓	✓
14	SVP/RWPs installed to correct position, level and capped off.		✓	NA
15	Anchor blocks to correct detail at specified locations		✓	N/A
16	Bedding & surround as specified		✓	✓
17	Air testing passed/witnessed:		✓	X
18	Photos attached		✓	✓
19	Geotextile Installed as per specification & checked		✓	✓

Originator - GCL Site Manager		Client Representative	
Name : Rohanbata De Sousa		Name : KEVIN MURPHY	
Signature: 	Date: 20/5/21	Signature: 	Date: 9/8/21

GCL-QA-002

PROJECT NAME: Clarendon Road Phase 3a

Drainage Air Test Sheet

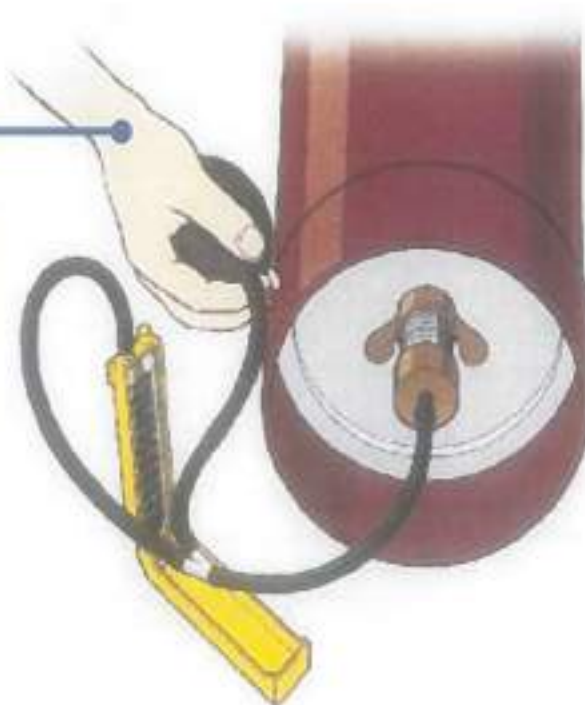
Client: St. William	Test date: 20/5/21
Drainage Check Sheet Ref no: 53	Test. Ref. No: 53

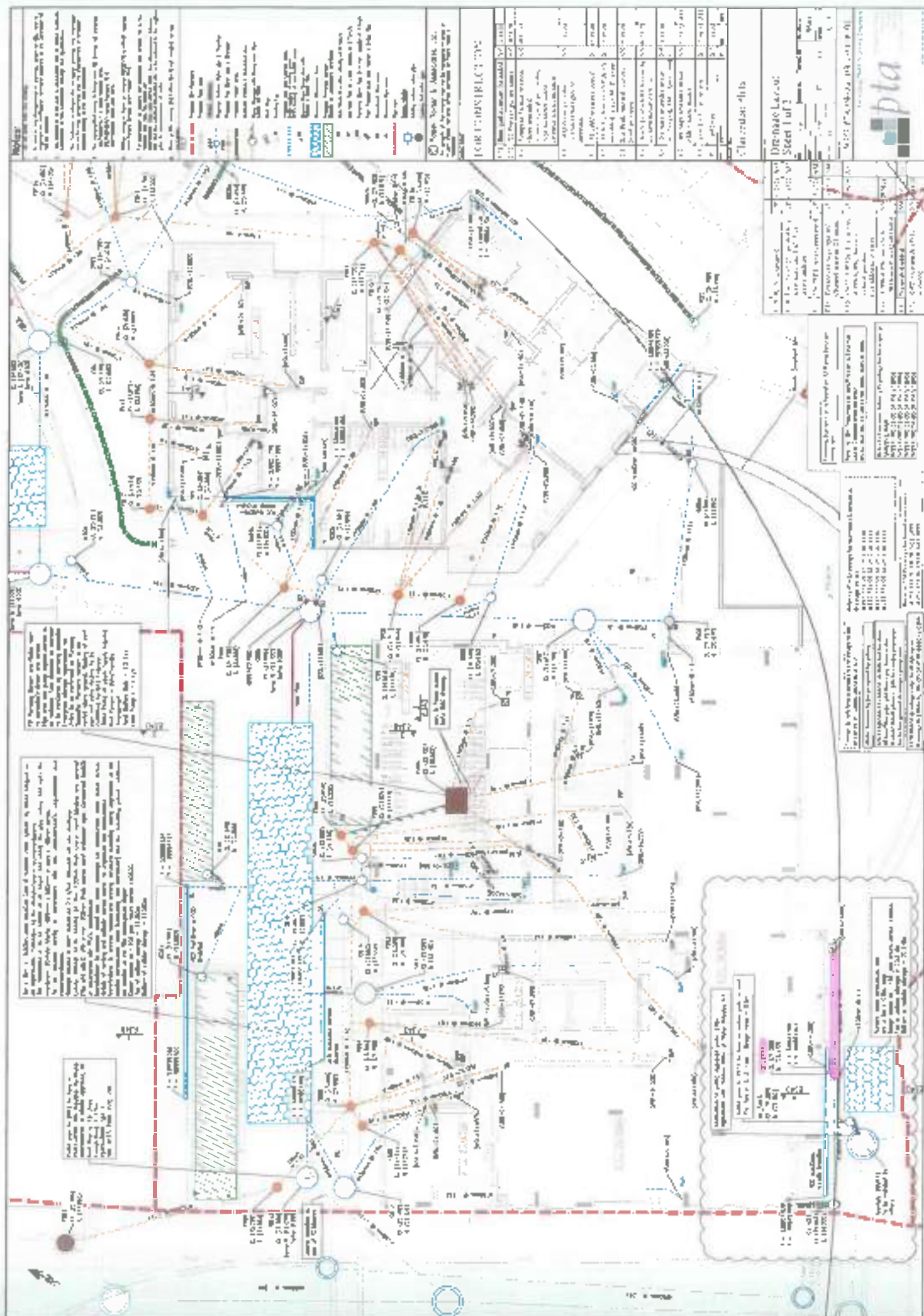
Pipe Run	Air gauge pressure		Pipe dia.(ø)	Test Time	Result	Remarks
	Initial	Final				
DI-SW14 - TG	100	100	100	5 min	Good	N/A

Signed: (Technician) <i>Mko</i>	Witnessed by: R. De Sousa
Verified By: (Technical Manager) Rohallah De Sousa	Date: 20/05/21

Air Test - Testing Guidelines

1. Seal pipe section with appropriate size drain test plug.
Removes any grease or foreign material from installation point. Ensure no dirt is trapped between seal of plug and plates. Ensure plug is inserted square to pipe wall, ensure wing nut and sealing cap are tight.
2. Fit test nipple to one of the drain test plugs.
3. Connect rubber hose via 'T' piece to nipple, 'U' gauge and hand bellows.
4. Fit 'U' gauge with water to 'zero'.
5. Squeeze the hand bellows gently until the level reaches 100mm on the open side of the gauge and the lower limb below zero on the closed side. The device must hold no less than 150mm during a period of 5 minutes without further pumping, after allowing a suitable time for stabilisation of air temperature. If it drops below 150mm within the specified time the pipe section is leaking.







DI_SW/4



DI-SW14 run to TG