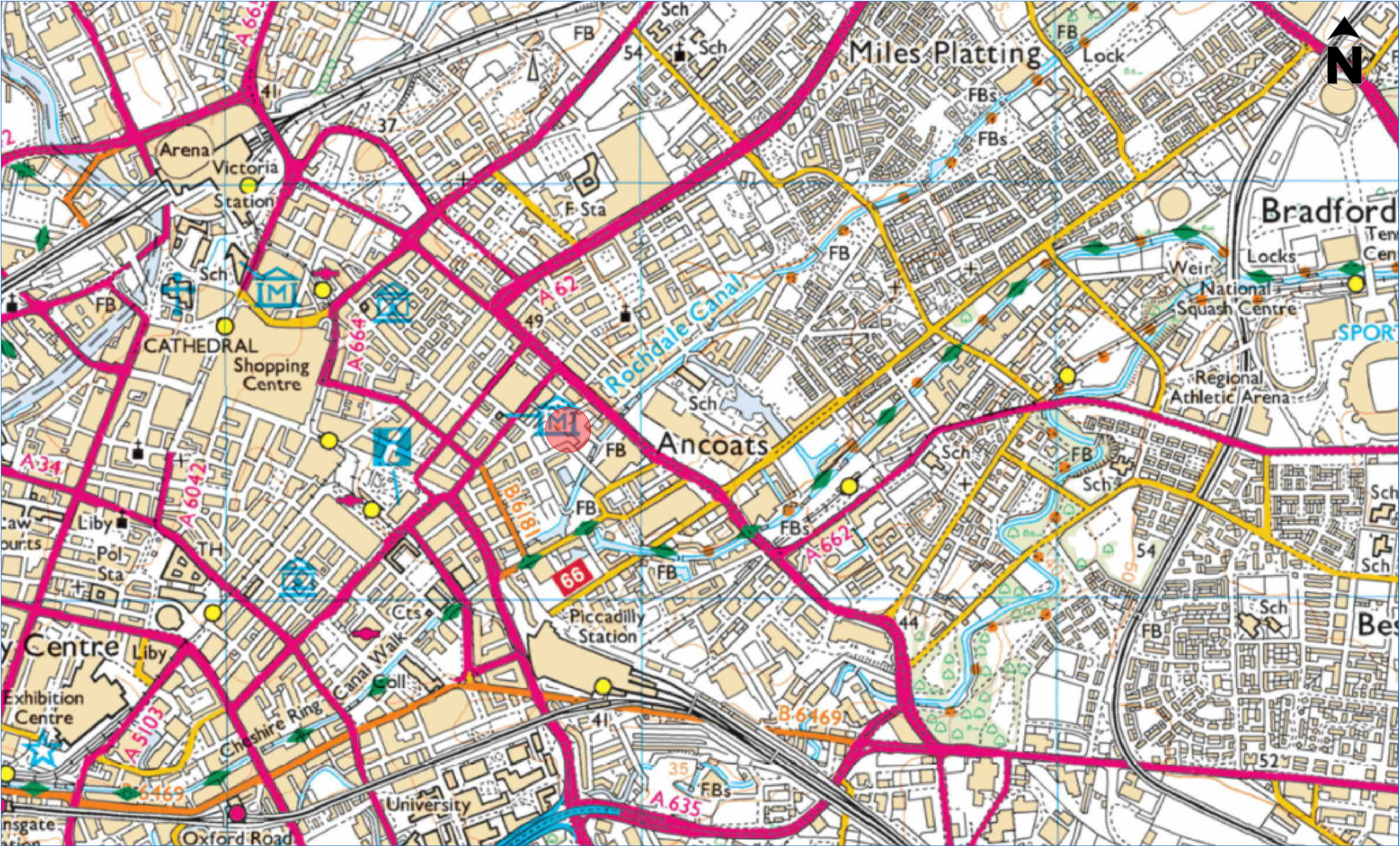
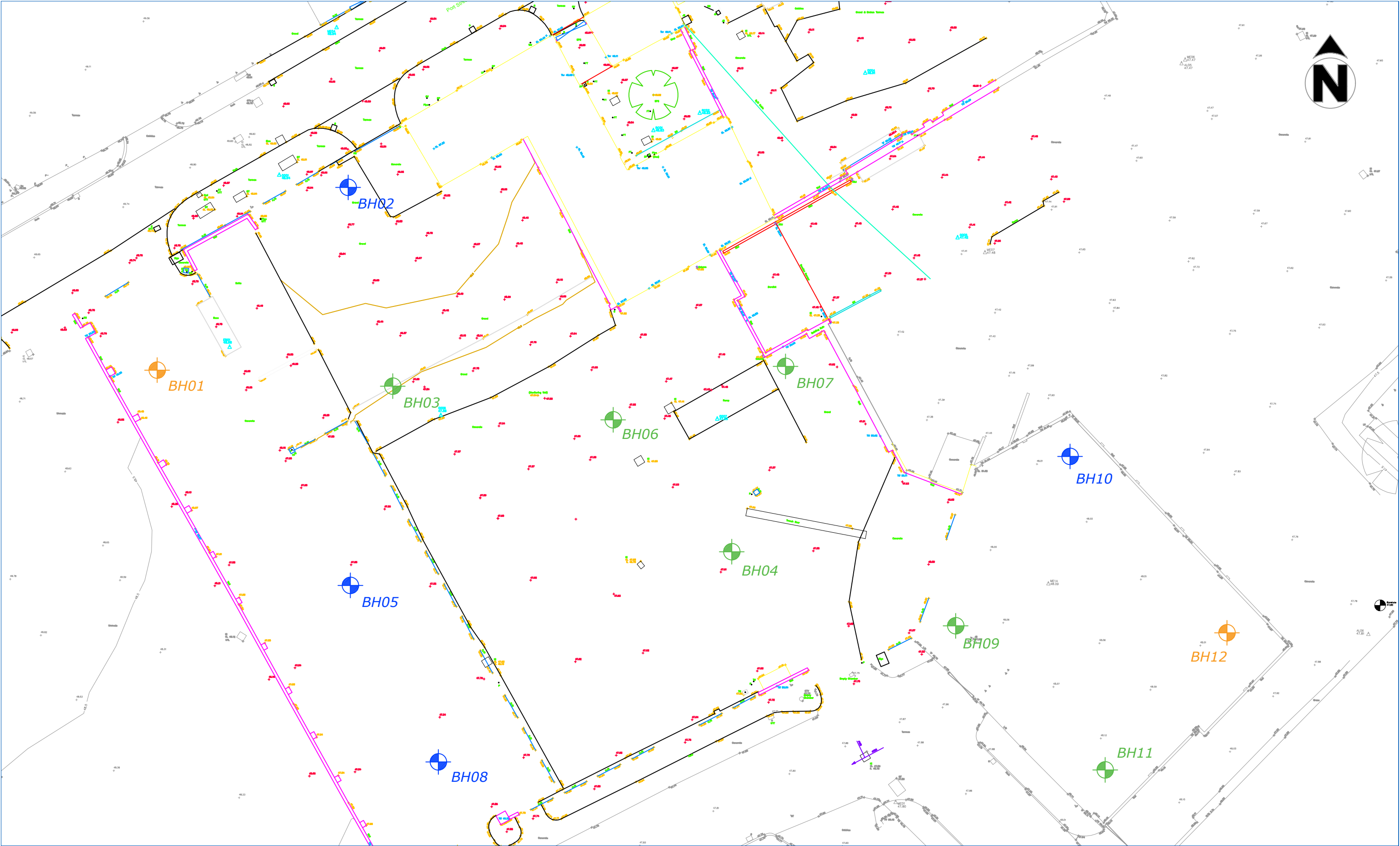




APPENDIX 1 - Plans



GROUNDTECH CONSULTING	CLIENT	DATE				Status		Notes  SITE LOCATION
	FAIRHURST	JULY 2023				Preliminary		
	PROJECT TITLE	SCALE				Draft		
	TARIFF STREET	NTS				Issued		
	PLAN TITLE	PLAN NUMBER				For Comment		
	PROJECT LOCATION PLAN	GRO-22079-P01	Rev.	Details	Date	Approved		



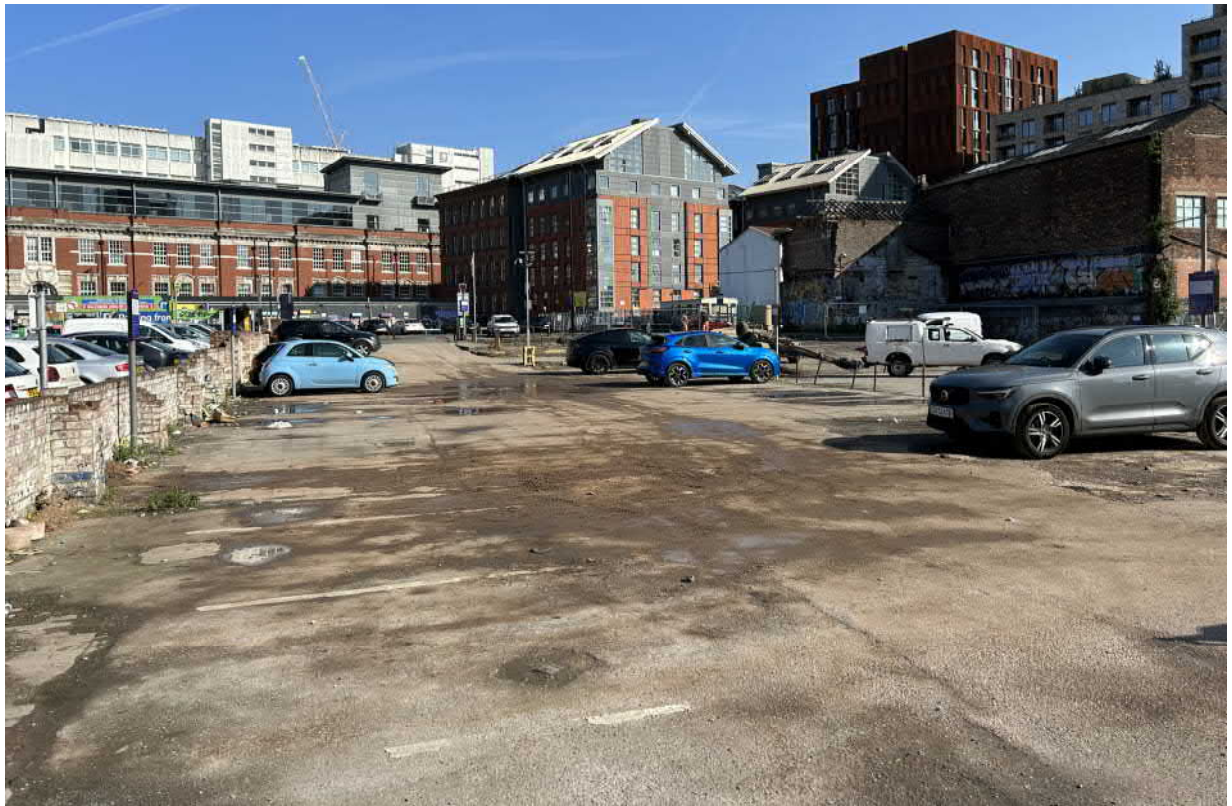
GROUNDTECH CONSULTING	CLIENT FAIRHURST	DATE JULY 2023				Status	Notes CABLE PERCUSSIVE BOREHOLE ADVANCED TO ROCKHEAD CABLE PERCUSSIVE BOREHOLE ADVANCED TO ROCKHEAD WITH ROTARY OPEN HOLE FOLLOW ON SHALLOW CABLE PERCUSSIVE BOREHOLE
	PROJECT TITLE TARIFF STREET	SCALE NTS				Preliminary	
	PLAN TITLE EXPLORATORY HOLE LOCATION PLAN	PLAN NUMBER GRO-22079-P02				Draft	
						Issued	
						For Comment	
			Rev.	Details	Date	Approved	



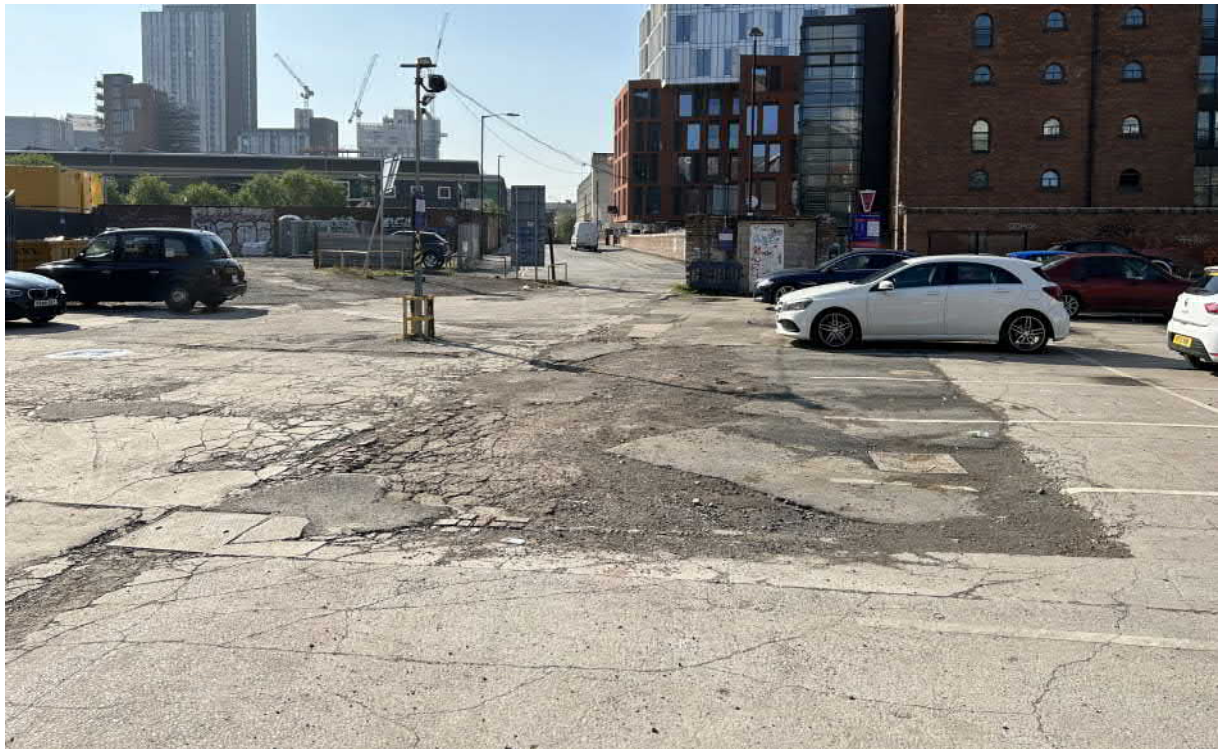
APPENDIX 2 - Site Photographs



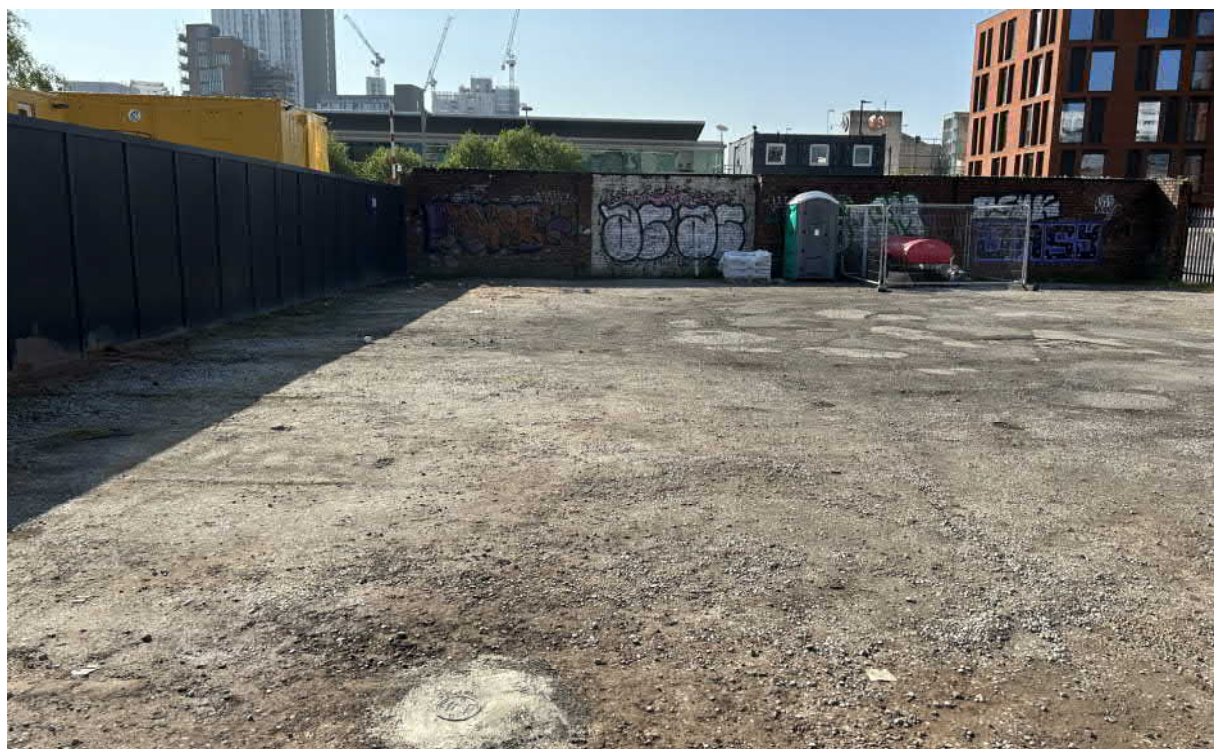
Photograph 1 – Centre of the site and the locations of BH04.



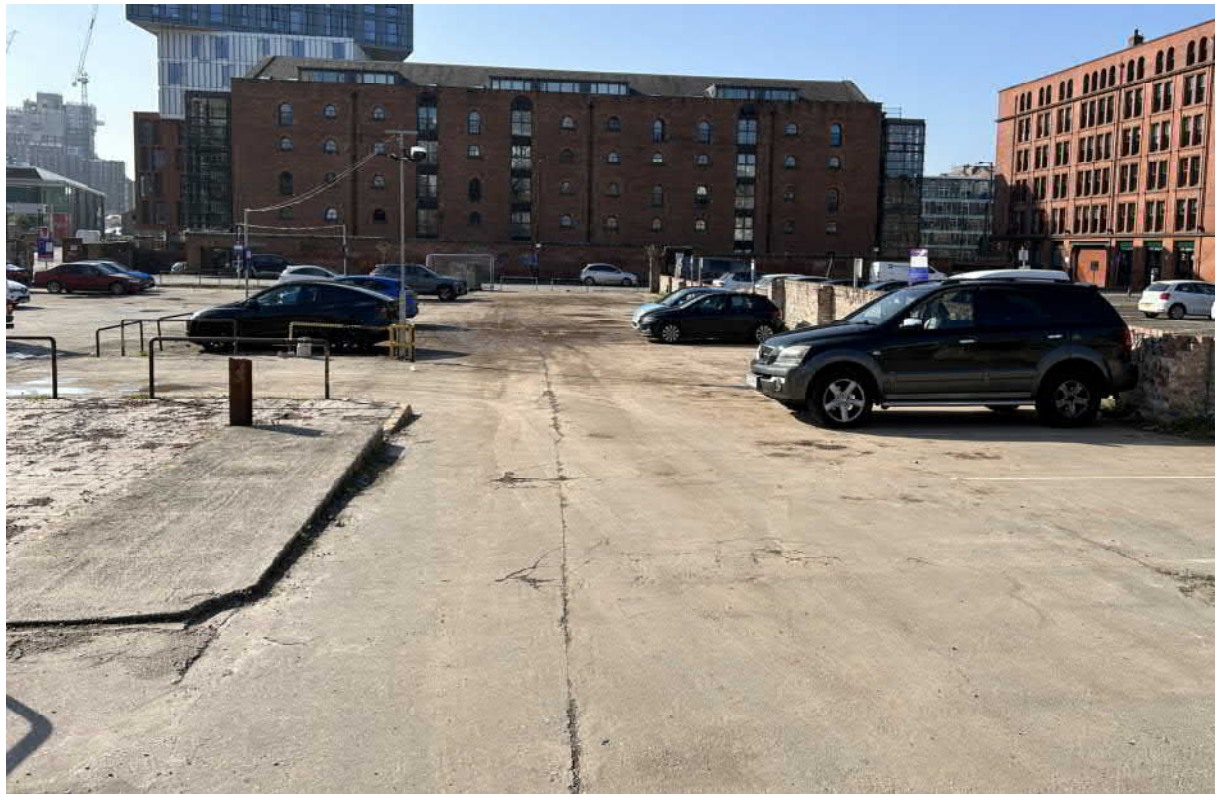
Photograph 2 – South western corner of the site overlooking the locations of BH05 and BH08.



Photograph 3 - Centre of the site in the locations of BH04.



Photograph 4 - South western corner of the site and the locations of BH10 to BH12.



Photograph 5 – North western corner of the site and the location of BH01.



APPENDIX 3 - Exploratory Hole Logs



GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH01

Sheet 1 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	48.30		MADE GROUND: Light grey reinforced concrete.	
		0.20			0.20	48.20		MADE GROUND: Grey brown angular to subangular fine to coarse gravel of brick and concrete.	
		0.35			0.35	48.05		MADE GROUND: Light grey reinforced concrete.	
		0.50	ES					MADE GROUND: Dark grey brown clayey sandy angular to subangular fine to medium gravel of brick, flint, clinker concrete and slate. Sand is medium to coarse. Moderate hydrocarbon odour.	
		1.00	ES		1.00	47.40		MADE GROUND: Soft to firm dark grey slightly gravelly slightly sandy clay. Gravel is subangular to rounded fine to coarse of mixed lithologies including flint and brick. Sand is fine to coarse. Strong hydrocarbon odour.	
		1.20		N=2 (1,0/1,0,0,1)				MADE GROUND: Firm dark grey slightly sandy gravelly silty clay. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, concrete, clinker and flint.	
		1.20 - 1.65	D						
		2.00	ES		2.00	46.40			
		2.00		N=2 (1,0/1,0,1,0)					
		2.00 - 2.45	D						
		3.00		N=14 (1,1/2,3,4,5)	3.00	45.40			
		3.00 - 3.45	D						
		3.00 - 3.50	B						
		3.20	ES						
		4.00		N=15 (1,2/3,3,4,5)					
		4.00 - 4.45	D						
		5.00		N=14 (1,2/2,3,4,5)					
		5.00 - 5.45	D						
		6.00		N=16 (2,3/3,4,4,5)					
		6.00 - 6.45	D						
		7.50		N=21 (4,4/5,5,5,6)	7.50	40.90			
		7.50 - 7.95	D						
		7.50 - 8.00	B						
		8.00	ES		8.00	40.40			
		8.50 - 9.00	B						
		9.00		N=18 (3,4/4,4,5,5)					
		9.00 - 9.45	D						

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH01

Sheet 2 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 10.50 - 10.95	D	N=17 (2,2/3,4,5,5)	11.00	37.40		Medium dense brown gravelly clayey fine to medium SAND. Gravel is subangular to rounded fine of flint and coal fragments.	11
		12.00 12.00 - 12.45	D	N=17 (2,3/3,4,5,5)					12
		13.00	ES		12.90	35.50		Firm to stiff brown slightly gravelly silty very sandy CLAY. Gravel is subangular to rounded fine of flint and coal fragments. Sand is fine to medium.	13
		13.50 13.50 - 13.95	D	N=16 (2,3/3,4,5,4)					14
		15.00 15.00 - 15.45 15.00 - 15.50	D B	N=50 (8,10/50 for 225mm)	15.00	33.40		Firm to stiff brown gravelly very sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including flint and siltstone.	15
		16.50 16.50 - 16.95 16.50 - 17.00	D B	N=38 (3,3/4,8,10,16)	16.50	31.90		Dense to very dense brown slightly clayey slightly gravelly silty fine to medium SAND. Gravel is subrounded to rounded fine of mixed lithologies including chert and flint.	17
		18.00 18.00	ES	N=50 (5,5/50 for 200mm)					18
		18.00 - 18.45	D						19
		19.50 19.50 - 19.95	D	N=50 (5,7/50 for 190mm)					20
								Continued on next sheet	

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH01

Sheet 3 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00 21.00 - 21.45	B	N=22 (3,4/4,6,6,6)	21.00	27.40		Very stiff brown very sandy very gravelly CLAY. grave is subrounded to rounded fine to coarse if mixed lithologies including flint.	21
		21.80	B						22
		22.50 22.50 - 22.95 23.00	D ES	N=50 (6,7/50 for 140mm)					23
		24.00 24.00 - 24.45	B	N=50 (8,10/50 for 150mm)					24
		25.50 25.50 - 25.95 25.80 26.00 - 26.05 26.05 26.20	B B D D	N=50 (8,8/50 for 200mm)	26.20 26.25	22.20 22.15		Weak red fine to medium grained SANDSTONE destructured recovered as sandy angular to subangular fine to coarse gravel. Sand is fine to coarse. Red fine to medium grained SANDSTONE.	26
		26.25 26.50		N=50 (25 for 50mm/50 for 30mm) N=50 (25 for 40mm/50 for 25mm) N=50 (25 for 19mm/50 for 30mm)					27
		27.50		N=50 (25 for 22mm/50 for 20mm)					28
		29.00		N=50 (25 for 10mm/50 for 25mm)					29
									30

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.



Borehole Log

Borehole No.

BH01

Sheet 4 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		30.00		N=50 (25 for 7mm/50 for 20mm)					
		31.00		N=50 (25 for 10mm/50 for 30mm)					31
					32.00	16.40		End of borehole at 32.00 m	32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.







GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH02

Sheet 2 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398411.97 - 384775.54

Hole Type
CP

Location: MANCHESTER

Level: 48.84

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 20/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.95	U	N=18 (3,4/4,4,5,5)	12.50	36.34		Becoming firm to stiff from 10.5m bgl.	11
		11.00	D						
		12.00	D						
		12.00 - 12.45	B						
		12.00 - 12.50	D						
		12.50	D	N=50 (25 for 40mm/50 for 60mm)	13.50	35.34		Brown very gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and siltstone.	13
		13.50 - 13.95	U						
		13.50 - 14.00	B						
		15.00	ES						
		15.00	D					Sandstone boulder encountered between 14.8m bgl and 15.2m bgl.	15
		15.00 - 15.45	D						
		16.50 - 16.95	U						
		17.00	D						
		17.00 - 17.50	B						
		18.00	D	N=50 (25 for 50mm/50 for 40mm)	18.50	30.34		Very stiff brown gravelly sandy CLAY with moderate cobble content of sandstone. Gravel is angular to subangular fine to medium of mixed lithologies including flint and sandstone. Sand is fine to coarse.	14
		18.50 - 18.95	D						
		19.50	D						
		19.50 - 19.95	B						
		19.50 - 20.00	B						
								Continued on next sheet	20

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 2m rising to 1.8m after 20 minutes. 4. Chiselling between 14.8m bgl and 15.2m bgl for 2 hours. 5. SPT refusals recorded from 15.0m bgl. 6. SPT refusal recorded at 26.5m bgl on Sandstone bedrock. 7. Chiselling undertaken for 30 minutes on Sandstone bedrock. 8. SPT refusal recorded at 26.7m bgl. 6. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH02

Sheet 3 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398411.97 - 384775.54

Hole Type
CP

Location: MANCHESTER

Level: 48.84

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 20/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		20.00	ES		22.00	26.84			21
		21.00		N=50 (25 for 90mm/50 for 95mm)					
		21.00 - 21.45	D						
		22.50		N=50 (25 for 80mm/50 for 100mm)	26.20	22.64		Very dense brown gravelly medium to coarse SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies including sandstone, siltstone, quartzite and flint.	22
		22.50 - 22.95	D						
		22.50 - 23.00	B						23
		24.00		N=50 (25 for 85mm/50 for 125mm)	26.95	21.89		Weak dark red medium grained SANDSTONE destructured recovered as sandy angular to subangular medium to coarse gravel. Sand is medium to coarse.	24
		24.00 - 24.45	D						
		25.00	ES						25
		25.50		N=50 (25 for 90mm/50 for 125mm)					
		25.50 - 25.95	D						26
		26.50		N=50 (25 for 40mm/50 for 30mm)	26.95	21.89		Weak dark red medium grained SANDSTONE destructured recovered as sandy angular to subangular medium to coarse gravel. Sand is medium to coarse.	27
		26.50 - 26.70	D						
		26.70	D						
		26.70		N=50 (25 for 40mm/50 for 25mm)					28
								End of borehole at 26.95 m	29
									30

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 2m rising to 1.8m after 20 minutes. 4. Chiselling between 14.8m bgl and 15.2m bgl for 2 hours. 5. SPT refusals recorded from 15.0m bgl. 6. SPT refusal recorded at 26.5m bgl on Sandstone bedrock. 7. Chiselling undertaken for 30 minutes on Sandstone bedrock. 8. SPT refusal recorded at 26.7m bgl. 6. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH03

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398399.49 - 384776.33

Hole Type
CP

Location: MANCHESTER

Level: 48.13

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 18/05/2023

Logged By
KJ

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES	N=9 (1,2/2,4,2,1)	0.20	47.93		MADE GROUND: Dark grey sandy angular to subangular fine to coarse gravel of tarmac and concrete. Sand is fine to coarse.	1
		1.00	ES		0.80	47.33		MADE GROUND: Brown very gravelly fine to medium sand. Gravel is subangular to subrounded coarse to medium of mixed lithologies including sandstone and brick.	
		1.20 1.20 - 1.65	D					MADE GROUND: Dark brown gravelly silty fine to medium sand. Gravel is angular to subangular medium to coarse of mixed lithologies including brick and sandstone.	
		2.00 2.00 - 2.45 2.00 - 2.50	D B	N=6 (1,0/0,2,2,2)					2
		3.00 3.00 3.00 - 3.45	ES D	N=15 (2,3/3,4,4,4)	2.80	45.33		Stiff brown grey gravelly CLAY. Gravel is subangular to subrounded medium to coarse of mixed lithologies including chert and siltstone.	3
		4.00 - 4.45	U						4
		4.50	D						
		5.00 5.00 - 5.45	D	N=17 (2,3/4,4,4,5)					5
					5.45	42.68		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. No groundwater encountered. 4. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH04

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398388.97 - 384803.85

Hole Type
CP

Location: MANCHESTER

Level: 47.59

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.30	47.29		MADE GROUND: Light grey concrete.	
		0.50	ES		0.50	47.09		MADE GROUND: Light brown grey very gravelly medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including concrete and quartzite.	
		1.00	ES					MADE GROUND: Soft to firm dark brown sandy gravelly clay. Gravel is angular to subangular fine to coarse of mixed lithologies including concrete. Sand is fine to medium.	1
		1.20		N=15 (2,3/3,4,4,4)					
		1.20 - 1.65	D		1.50	46.09			
		2.00		N=15 (2,2/3,4,4,4)					2
		2.00 - 2.45	D						
		2.00 - 2.50	B						
		3.00 - 3.45	U						3
		3.50	D						
		3.50	ES						
		4.00		N=15 (2,2/2,4,4,5)					4
		4.00 - 4.45	D						
		4.00 - 4.50	B						
		5.00		N=14 (3,3/3,3,4,4)					5
		5.00 - 5.45	D		5.45	42.14			
								End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 1.0m bgl, rising to 0.8m bgl after 20 minutes. 4. Standpipe installed to 2.0m: 0.5m plain, 1.5m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH05

Sheet 1 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398387.87 - 384769.02

Hole Type
CP

Location: MANCHESTER

Level: 47.95

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES	N=9 (1,2/2,2,3,2)	0.30	47.65		MADE GROUND: Light grey concrete.	1
		0.50	D		0.50	47.45		MADE GROUND: Light brown gravelly medium to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including limestone.	
		0.50	ES		0.80	47.15		MADE GROUND: Firm dark brown gravelly sandy clay. Gravel is angular to subangular fine to coarse of mixed lithologies including concrete and sandstone.	
		1.00	ES		1.70	46.25		MADE GROUND: Firm dark brown gravelly sandy silty clay. Gravel angular to subangular fine to medium of mixed lithologies including brick and glass. Sand medium to coarse.	
		1.20	B	N=2 (1,0/1,0,0,1)	3.00	44.95		MADE GROUND: Soft dark grey black slightly gravelly slightly sandy silty clay. Gravel is angular to subangular fine to medium of mixed lithologies including glass and brick. Sand is fine to medium.	2
		2.00	ES					Moderate hydrocarbin odour and slight sheen identified at 2.0m bgl.	
		2.00	B					MADE GROUND: Soft to firm brown sandy gravelly clay. Gravel is angular to subangular fine to coarse of mixed lithologies including brick and sandstone. Sand is fine to medium.	
		2.00 - 2.45	D					Soft brown gravelly CLAY. Gravel is subangular to subrounded medium to coarse of mixed lithologies including sandstone and flint.	
		2.00 - 2.45	D	N=6 (1,1/1,1,2,2)	4.00	43.95		Soft to firm medium strength dark brown sandy gravelly CLAY. Gravel is medium to fine subangular to subrounded of mixed lithologies including sandstone and siltstone. Sand is fine to medium.	3
		3.00	ES					Firm dark brown gravelly CLAY. Gravel is medium to coarse subangular to subrounded of mixed lithologies including sandstone.	
		3.00 - 3.45	B						
		3.00 - 3.45	D						
		4.00	B	N=6 (1,1/1,1,2,2)	4.60	43.35			4
		4.00 - 4.45	D						
		4.00 - 4.45	D						
		4.60	ES						
		5.00 - 5.45	U	N=0 (0,0/0,0,0,0)	8.10	39.85			5
		5.50	B						
		6.00	B						
		6.00 - 6.45	D						
		6.00 - 6.45	D	N=30 (2,3/4,6,8,12)	9.00	39.85			6
		7.50 - 7.95	U						
		8.00	D						
		8.10	D						
		9.00	ES	N=30 (2,3/4,6,8,12)	9.00	39.85			7
		9.00	B						
		9.00 - 9.45	D						
		9.00 - 9.45	D						
		9.00 - 9.45	D	N=30 (2,3/4,6,8,12)	9.00	39.85			8
		9.00	ES						
		9.00	B						
		9.00 - 9.45	D						
		9.00 - 9.45	D						

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 0.8m bgl. 4. SPT refusals recorded from 13.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 24.6m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 24.9m bgl. 8. Standpipe installed to 4.5m: 0.5m plain, 4.0m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH05

Sheet 2 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398387.87 - 384769.02

Hole Type
CP

Location: MANCHESTER

Level: 47.95

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 10.50 - 10.95 10.50 - 10.95	B D	N=27 (2,3/3,4,7,13)	13.50	34.45		Stiff very sandy gravelly CLAY. Gravel is fine to medium subangular to subrounded of mixed lithologies including sandstone. Sand is fine to medium.	11
		12.00 12.00 - 12.45 12.00 - 12.45	B D	N=30 (2,3/5,5,8,12)					12
		13.50 13.50	ES	N=50 (3,10/50 for 115mm)					13
		13.50 - 13.95 13.50 - 13.95	B D						14
		15.00 15.00 - 15.45 15.00 - 15.45	B D	N=50 (8,17/50 for 115mm)					15
		16.50 16.50 - 16.95 16.50 - 16.95 17.00	B D ES	N=50 (25 for 25mm/50 for 125mm)					16
		18.00 18.00 - 18.45	D	N=50 (25 for 95mm/50 for 115mm)					17
		19.50 19.50	D	N=50 (25 for 80mm/50 for 95mm)					18
									19
									20

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 0.8m bgl. 4. SPT refusals recorded from 13.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 24.6m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 24.9m bgl. 8. Standpipe installed to 4.5m: 0.5m plain, 4.0m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH05

Sheet 3 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398387.87 - 384769.02

Hole Type
CP

Location: MANCHESTER

Level: 47.95

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00		N=50 (25 for 125mm/50 for 125mm)					21
		21.00 - 21.45	D						
		22.00	ES		22.00	25.95			22
		22.50		N=50 (25 for 105mm/50 for 200mm)					
		22.50 - 22.95	D					Stiff brown sandy gravelly CLAY with moderate to high cobble content of sandstone and siltstone. Gravel is subangular to subrounded fine to coarse of sandstone and flint. Sand is fine to coarse.	23
		24.00		N=50 (25 for 95mm/50 for 100mm)	24.00	23.95			24
		24.00 - 24.45	D					Very dense very sandy very silty subangular to subrounded medium to coarse GRAVEL of mixed lithologies including sandstone. Sand is fine to medium.	
		24.60	D	N=50 (25 for 5mm/50 for 55mm)	24.60	23.35			
		24.60						Weak red SANDSTONE destructured recovered as very dense sandy angular to subangular fine to coarse gravel. Sand is medium to coarse.	25
		24.90	D	N=50 (25 for 2mm/50 for 40mm)	24.90	23.05		End of borehole at 24.90 m	
		24.90							
									26
									27
									28
									29
									30

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 0.8m bgl. 4. SPT refusals recorded from 13.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 24.6m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 24.9m bgl. 8. Standpipe installed to 4.5m: 0.5m plain, 4.0m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH06

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398399.15 - 384787.92

Hole Type
CP

Location: MANCHESTER

Level: 47.59

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 18/05/2023

Logged By
KJ

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	47.29		MADE GROUND: Light grey concrete.	
					0.70	46.89		MADE GROUND: Grey brown angular to subangular fine to coarse gravel of brick and concrete.	
		1.20 1.20 - 1.65	D	N=0 (1,0/0,0,0,0)				MADE GROUND: Brown very gravelly fine to coarse sand. Gravel is angular to subangular medium to coarse of mixed lithologies including brick, concrete and glass.	1
		2.00 2.00	ES	N=0 (1,0/0,0,0,0)	1.50	46.09		MADE GROUND: Dark brown black very gravelly sandy silty clay. Gravel is angular to subangular fine to medium of mixed lithologies including brick and glass. Sand is fine to medium.	2
		2.00 - 2.45	D						
		2.00 - 2.50	B						
		3.00 - 3.45	U						3
		3.50	D		3.50	44.09		MADE GROUND: Stiff brown red gravelly clay. Gravel is angular to subangular fine to medium of mixed lithologies including sandstone and brick.	
		4.00 4.00	ES	N=10 (2,2/2,2,3,3)	4.00	43.59			4
		4.00 - 4.45	D					Firm grey brown gravelly CLAY. Gravel is subangular to subrounded fine to medium of mixed lithologies including sandstone and siltstone.	
		4.00 - 4.50	B						
		5.00 5.00 - 5.45	D	N=12 (2,2/2,3,3,4)					5
					5.45	42.14		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 1.0m bgl, rising to 0.6m bgl after 20 minutes. 4. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH07

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398406.60 - 384800.95

Hole Type
CP

Location: MANCHESTER

Level: 47.65

Scale
1:50

Client: FAIRHURST

Dates: 17/05/2023 - 17/05/2023

Logged By
KJ

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	47.35		MADE GROUND: Light grey concrete.	
					0.70	46.95		MADE GROUND: Brown very gravelly medium to coarse sand. Gravel is angular to subangular medium to coarse of mixed lithologies including brick and sandstone.	
		1.20 1.20 - 1.65 1.50	D ES	N=0 (1,0/0,0,0,0)	1.50	46.15		MADE GROUND: Firm brown sandy gravelly clay. Gravel subangular to subrounded coarse to medium of mixed lithologies including brick and sandstone. Sand is fine to medium.	1
		2.00 2.00 - 2.45	D	N=0 (1,0/0,0,0,0)				MADE GROUND: Firm brown gravelly clay. Gravel is angular to subangular medium to coarse of mixed lithologies including brick and limestone.	2
		3.00 - 3.45	U		3.00	44.65		Firm brown very sandy gravelly CLAY. Gravel is angular to subangular fine to medium of mixed lithologies including sandstone. Sand is fine.	3
		3.50	D						
		3.80	ES						
		4.00 4.00 - 4.45 4.00 - 4.50	D B	N=13 (1,2/2,2,4,5)					4
		5.00 5.00 - 5.45	D	N=12 (2,2/2,3,3,4)					5
		6.50 - 6.95	U						6
		7.00	D		7.00	40.65		End of borehole at 7.00 m	7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 1.0m bgl, rising to 0.6m bgl after 20 minutes. 4. Monitoring standpipe installed to 3.5m bgl: 1m plain, 2.5m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH08

Sheet 1 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398368.72 - 384780.04

Hole Type
CP

Location: MANCHESTER

Level: 47.92

Scale
1:50

Client: FAIRHURST

Dates: 10/05/2023 - 10/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	47.82		MADE GROUND: Light grey concrete.	
		0.20			0.20	47.72		MADE GROUND: Grey brown angular to subangular fine to coarse gravel of brick and concrete.	
		0.45			0.45	47.47		MADE GROUND: Light grey concrete.	
		0.48			0.48	47.44		MADE GROUND: Black tarmac.	
		1.00	ES					MADE GROUND: Grey to dark grey mottled orange clayey very sandy angular to subangular fine to coarse gravel of mixed lithologies including brick, clinker, asphalt, sandstone, glass and slate. Sand is fine to coarse.	
		1.20		N=3 (1,0/0,1,1,1)					
		1.20 - 1.65	D						
					1.60	46.32		MADE GROUND: Very soft dark grey sandy silty gravelly clay. Gravel is angular to subrounded fine to coarse of mixed lithologies including brick, clinker, asphalt, sandstone, glass and slate. Sand is fine to coarse.	
		2.00	ES						
		2.00		N=2 (1,0/1,0,1,0)					
		2.00 - 2.45	B						
		2.00 - 2.45	D						
		3.00	ES						
		3.00		N=13 (2,2/3,3,3,4)					
		3.00 - 3.45	B		3.20	44.72		Firm brown mottled grey slightly gravelly CLAY with lenses of orange silt. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and siltstone.	
		3.00 - 3.45	D						
		4.00	ES						
		4.00		N=12 (2,2/2,3,3,4)					
		4.00 - 4.45	B						
		4.00 - 4.45	D						
		5.00	ES						
		5.00		N=13 (2,2/3,3,3,4)					
		5.00 - 5.45	B						
		5.00 - 5.45	D						
		5.80	D		5.80	42.12		Firm to stiff high strength grey brown thinly laminated slightly sandy silty CLAY. Sand is fine to coarse.	
		6.00	ES						
		6.00		N=10 (1,2/2,2,3,3)					
		6.00 - 6.45	B						
		6.00 - 6.45	D						
		7.50 - 7.95	U						
		8.00	D						
		9.00		N=12 (2,2/3,3,3,3)					
		9.00 - 9.45	B						
		9.00 - 9.45	D						

Becoming firm from 9.5m bgl.

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Chiselling undertaken between 19.1m bgl and 19.2m bgl for 1 hour. 5. Chiselling undertaken between 22.6m bgl and 22.8m bgl for 1 hour. 6. Chiselling undertaken between 26.9m bgl and 27.0m bgl for 40 minutes. 7. SPT refusal recorded at 27.7m bgl on Sandstone bedrock. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 27.9m bgl. 10. Monitoring standpipe installed to 5.8m bgl: 2.8m plain, 3m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH08

Sheet 2 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398368.72 - 384780.04

Hole Type
CP

Location: MANCHESTER

Level: 47.92

Scale
1:50

Client: FAIRHURST

Dates: 10/05/2023 - 10/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.95	U		10.50	37.42		Stiff brown mottled grey gravelly very sandy silty CLAY. Gravel is subrounded to rounded fine to coarse of mixed lithologies including flint and sandstone. Sand is fine to medium.	11
		11.00 11.00	D ES						
		12.00		N=45 (6,7/8,11,12,14)					12
		12.00 - 12.45	B						
		12.00 - 12.45	D						
		12.00 - 12.45	D						
		13.50		N=46 (6,7/9,10,13,14)					
		13.50 - 13.95	B						
		13.50 - 13.95	D						14
		15.00		N=50 (7,7/50 for 235mm)					15
		15.00 - 15.45	B						
		15.00 - 15.45	D						
		16.00	ES						16
		16.50		N=50 (8,9/50 for 210mm)	16.30	31.62		Very dense brown medium to coarse clayey gravelly SAND. Gravel is subrounded to rounded fine to medium of mixed lithologies including flint and quartzite.	17
		16.50 - 16.95	B						
		16.50 - 16.95	D						
		18.00		N=50 (8,9/50 for 200mm)					18
		18.00 - 18.45	B						
		18.00 - 18.45	D						
		19.50		N=50 (25 for 95mm/50 for 105mm)	19.00	28.92		Very dense brown clayey very sandy subangular to rounded fine to coarse GRAVEL of mixed lithologies including flint, quartzite and siltstone. Sand is fine to coarse. <i>Siltstone cobble encountered between 19.1m bgl and 19.2m bgl.</i>	19
		19.50 - 19.95	B						
		19.50 - 19.95	D						
									20

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Chiselling undertaken between 19.1m bgl and 19.2m bgl for 1 hour. 5. Chiselling undertaken between 22.6m bgl and 22.8m bgl for 1 hour. 6. Chiselling undertaken between 26.9m bgl and 27.0m bgl for 40 minutes. 7. SPT refusal recorded at 27.7m bgl on Sandstone bedrock. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 27.9m bgl. 10. Monitoring standpipe installed to 5.8m bgl: 2.8m plain, 3m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH08

Sheet 3 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398368.72 - 384780.04

Hole Type
CP

Location: MANCHESTER

Level: 47.92

Scale
1:50

Client: FAIRHURST

Dates: 10/05/2023 - 10/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00	B	N=50 (25 for 115mm/50 for 125mm)	23.00	24.92			21
		21.00 - 21.45							22
		22.50	B	N=50 (25 for 115mm/50 for 115mm)	23.00	24.92		Flint cobble encountered between 22.6m bgl and 22.8m bgl.	23
		22.50 - 22.95							24
		24.00	B	N=50 (12,13/50 for 125mm)	27.20	20.72		Dense brown slightly silty slightly sandy subangular to rounded fine to coarse GRAVEL of mixed lithologies including flint, quartzite and siltstone. Sand is fine to coarse.	25
		24.00 - 24.45							26
		25.50	B	N=50 (12,13/50 for 165mm)	27.90	20.02		Weak red SANDSTONE destructured recovered as very dense sandy angular to subangular medium to coarse gravel.	27
		25.50 - 25.95							28
		27.00	D	N=50 (25 for 100mm/50 for 210mm)	27.90	20.02		End of borehole at 27.90 m	29
		27.00 - 27.45							30
		27.70	D	N=50 (25 for 50mm/50 for 40mm)	27.90	20.02			
		27.70							
		27.90	D	N=50 (25 for 10mm/50 for 30mm)	27.90	20.02			
		27.90							

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Chiselling undertaken between 19.1m bgl and 19.2m bgl for 1 hour. 5. Chiselling undertaken between 22.6m bgl and 22.8m bgl for 1 hour. 6. Chiselling undertaken between 26.9m bgl and 27.0m bgl for 40 minutes. 7. SPT refusal recorded at 27.7m bgl on Sandstone bedrock. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 27.9m bgl. 10. Monitoring standpipe installed to 5.8m bgl: 2.8m plain, 3m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH09

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398406.67 - 384801.00

Hole Type
CP

Location: MANCHESTER

Level: 47.69

Scale
1:50

Client: FAIRHURST

Dates: 09/05/2023 - 09/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	D		0.10	47.59		MADE GROUND: Black tarmac.	1
		0.20	ES					MADE GROUND: Dark grey very sandy silty angular to subangular fine to coarse gravel of mixed lithologies including brick, sandstone, glass, limestone and clinker with moderate cobble content of sandstone. Sand is fine to coarse.	
		0.50	ES						
		1.00	B						
		1.00	ES						
		1.50		N=9 (1,1/2,2,2,3)					
		1.50 - 1.95	D						
		1.50 - 2.00	B						
		2.00	ES						
		2.20	D	N=10 (2,1/1,2,3,4)					2
		2.50							
		2.50 - 2.95	D						
		2.50 - 3.00	B						
		3.00	ES						
		3.50 - 3.95	U	N=19 (3,3/3,4,5,7)	3.10	44.59		MADE GROUND: Soft dark grey dark brown sandy gravelly clay. Gravel is angular to subangular fine to coarse of mixed lithologies including wood, brick and concrete. Sand is fine. Firm to stiff brown sandy silty CLAY. Sand is fine.	3
		4.00	D						
		4.00	ES						
		4.50							
		4.50 - 4.95	D						
		4.50 - 5.00	B		3.50	44.19			4
		5.00	ES						
					5.00	42.69		End of borehole at 5.00 m	5
									6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH10

Sheet 1 of 2

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398393.75 - 384833.39

Hole Type
CP

Location: MANCHESTER

Level: 48.07

Scale
1:50

Client: FAIRHURST

Dates: 11/05/2023 - 11/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description							
		Depth (m)	Type	Results											
		0.20	ES		0.35	47.72		MADE GROUND: Black tarmac.	1						
		0.40	D					MADE GROUND: Dark grey silty sandy angular to subangular fine to coarse gravel of brick, asphalt, glass, sandstone and clinker. Sand is fine to coarse.							
		0.50	ES												
		1.00	B	N=12 (3,2/2,3,3,4)	1.20	46.87		MADE GROUND: Soft to firm dark grey mottled brown orange sandy gravelly clay. Gravel is angular to subrounded fine to medium of mixed lithologies including brick, coal, clinker and flint. Sand is fine to coarse.	2						
		1.00	ES												
		1.50	D												
		1.50 - 1.95	D												
		1.50 - 2.00	B												
		2.00	ES	N=15 (2,3/4,3,4,4)	1.80	46.27		Firm to stiff brown mottled grey slightly gravelly thinly laminated CLAY with grey veins of silt. Gravel is subrounded to rounded fine of flint.	3						
		2.20	D												
		2.50	D												
		2.50 - 2.95	D												
		2.50 - 3.00	B												
		3.00	ES					Firm brown grey mottled grey slightly gravelly thinly laminated silty CLAY. Gravel is subrounded to rounded fine of flint and siltstone.	4						
		3.50 - 3.95	U												
		4.00	D												
		4.00	ES												
		4.50	D	N=17 (2,3/4,4,4,5)					5						
		4.50 - 4.95	D												
		5.00	ES												
		5.20	D												
		5.50	D	N=19 (3,4/4,5,5,5)	5.40	42.67			6						
		5.50 - 5.95	D												
		5.50 - 6.00	B												
		6.00	ES												
		6.50	D	N=23 (1,3/5,5,6,7)					7						
		7.00	D												
		7.00 - 7.45	D												
		8.00	D												
		8.50	D	N=25 (4,5/6,6,6,7)					8						
		8.50 - 8.95	D												
		8.50 - 9.00	B												
											9				
										Becomes firm to stiff from 9.4m bgl.					
									10						
		10.00	D					Continued on next sheet							

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. No groundwater encountered. 4. SPT refusal recorded at 13.5m bgl. 5. SPT refusals recorded at 18.0m bgl on large boulder. 6. 2.5 hours chiselling undertaken. 7. SPT refusal recorded at 18.1m bgl. 8. Borehole terminated as instructed and standpipe installed to 18m: 14.5m plain, 3.5m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH10

Sheet 2 of 2

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398393.75 - 384833.39

Hole Type
CP

Location: MANCHESTER

Level: 48.07

Scale
1:50

Client: FAIRHURST

Dates: 11/05/2023 - 11/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.95	U						
		11.00 11.00	D ES						11
		12.00 12.00 - 12.45 12.00 - 12.50	D B	N=28 (5,4/5,6,8,9)					12
		13.00	D						13
		13.50 13.50 - 13.95	D	N=50 (6,8/50 for 150mm)					14
		14.50	D						
		15.00 15.00 - 15.95	D	N=39 (4,5/7,7,7,18)	15.00	33.07		Dense brown clayey gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse of mixed lithologies including flint and quartzite.	15
		16.00 16.00	D ES						16
		16.50 16.50 - 16.95	D	N=31 (6,5/6,8,8,9)					17
		17.50	D		17.20	30.87		Stiff brown slightly gravelly very sandy CLAY. Gravel is angular to subrounded fine to coarse of mixed lithologies including flint and quartzite.	
		18.00 18.00	D	N=50 (25 for 8mm/50 for 21mm)	18.10	29.97		Boulder encountered at 18.1m bgl. End of borehole at 18.10 m	18
		18.10 18.10	D	N=50 (25 for 4mm/50 for 16mm)					19
									20

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. No groundwater encountered. 4. SPT refusal recorded at 13.5m bgl. 5. SPT refusals recorded at 18.0m bgl on large boulder. 6. 2.5 hours chiselling undertaken. 7. SPT refusal recorded at 18.1m bgl. 8. Borehole terminated as instructed and standpipe installed to 18m: 14.5m plain, 3.5m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH11

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398372.23 - 384839.75

Hole Type
CP

Location: MANCHESTER

Level: 48.15

Scale
1:50

Client: FAIRHURST

Dates: 05/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15	48.00		MADE GROUND: Dark grey tarmac.	
		0.20	ES					MADE GROUND: Soft dark grey sandy gravelly clay. Gravel is angular to rounded fine to medium of mixed lithologies including brick, glass, flint and slate. Sand is fine to coarse.	
		0.40	B						
		0.50	ES						
		1.00	D						1
		1.00	ES						
		1.50		N=15 (2,3/3,4,4,4)					
		1.50 - 1.95	D						
		1.50 - 2.00	B						2
		2.00	ES						
		2.20	D						
		2.50		N=18 (4,3/4,4,5,5)					
		2.50 - 2.95	D		2.70	45.45			
		2.50 - 3.00	B					Firm to stiff slightly sandy gravelly silty thinly laminated CLAY. Gravel is subangular to rounded fine to medium of mixed lithologies including siltstone and flint. Sand is fine.	3
		3.00	ES						
		3.50 - 3.95	U						
		4.00	D						4
		4.00	ES						
		4.50		N=20 (2,3/4,5,5,6)					
		4.50 - 4.95	D						
		4.50 - 5.00	B						
		5.00	ES		5.00	43.15		End of borehole at 5.00 m	5
									6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH12

Sheet 1 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15	47.91		MADE GROUND: Dark grey orange very gravelly fine to coarse sand. Gravel is angular to subrounded fine to medium of mixed lithologies coke, clinker, glass and occasional flint. MADE GROUND: Dark grey mottled brown orange very sandy angular to subangular fine to coarse gravel of mixed lithologies including brick, clinker, concrete and limestone. Sand is fine to coarse of potash, brick fragments and silica. Firm to stiff brown mottled grey gravelly thinly laminated CLAY. Gravel is angular to subrounded fine to coarse of flint.	1
		0.20	ES						
		0.50	B						
		0.50	ES						
		1.00	ES						
		1.10	D		1.20	46.86			
		1.20	B						
		1.50	ES						
		1.50		N=27 (6,5/6,6,7,8)					
		1.50 - 1.95	D						
		2.50		N=24 (4,5/5,6,6,7)				Stiff brown slightly gravelly CLAY. Gravel is subangular to rounded fine to medium of mixed lithologies including flint and siltstone.	2
		2.50 - 2.95	D						
		3.50		N=28 (3,5/6,7,7,8)					
		3.50 - 3.95	D						
		4.50		N=27 (4,4/6,7,7,7)	4.50	43.56			
		4.50 - 4.95	D						
		5.50		N=24 (5,4/5,5,6,8)					
		5.50 - 5.95	D						
		6.00 - 6.45	U						
		6.50	ES						
		7.00		N=32 (6,6/7,8,8,9)				Continued on next sheet	3
		7.00 - 7.45	D						
		8.50		N=27 (5,5/5,7,7,8)					
		8.50 - 8.95	D						

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH12

Sheet 2 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.00		N=49 (6,9/11,12,12,14)	11.00	37.06		Brown slightly gravelly very clayey fine to medium SAND. Gravel is subangular to rounded fine to medium of mixed lithologies including flint and siltstone.	11
		10.00 - 10.45	D						
		10.00 - 10.50	B						
		11.50		N=21 (4,4/5,5,5,6)	12.00	35.16			12
		11.50	ES						
		11.50 - 11.95	D						
		12.00 - 12.50	B						
		13.00		N=24 (6,5/5,6,6,7)	13.00	31.06		Firm to stiff gravelly very sandy CLAY. Gravel is subangular to rounded fine to coarse of mixed lithologies of flint and coal. Sand is fine to medium.	13
		13.00 - 13.45	D						
		14.50		N=30 (7,7/6,7,8,9)	14.50	28.16			14
		14.50 - 14.95	D						
		14.50 - 15.00	B						
		15.50	D		15.50	27.06			15
		16.00		N=44 (8,10/9,10,11,14)	16.00	26.06			16
		16.00 - 16.45	D						
		16.00 - 16.50	B						
		16.50	ES						
		17.00	D		17.00	24.06		Very stiff extremely high strength brown slightly gravelly very sandy CLAY. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and sandstone. Sand is fine to coarse.	17
		17.50 - 17.95	U						
		18.00	D						
		19.00		N=47 (4,6/10,12,12,13)	19.00	22.06			19
		19.00 - 19.45	D						
		19.00 - 19.50	B						
		20.00	D		19.90	28.16		Continued on next sheet	20

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH12

Sheet 3 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		20.50 20.50 - 20.95 20.50 - 21.00	D B	N=33 (6,6/7,9,8,9)	21.00	27.06		Very stiff brown slightly gravelly slightly sandy clayey SILT. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and sandstone. Sand is fine to coarse.	21
		21.50 21.50	D ES					Dense brown very gravelly fine to coarse SAND with moderate to high cobble content of siltstone. Gravel is subangular to rounded fine to coarse of quartzite and flint.	
		22.00 22.00 - 22.95	B	N=44 (7,8/8,10,11,15)					
		23.00	D		24.80	23.26			23
		23.50 23.50 - 23.95	B	N=50 (16,9/50 for 116mm)					
		24.20 24.20	D					Chert cobble encountered between 24.0m bgl and 24.2m bgl.	
		24.20 - 24.90	B	N=50 (25 for 0mm/50 for 0mm)				Sandstone boulder encountered between 24.2m bgl and 24.8m bgl.	
		25.00 25.00 - 25.45 25.50	B D	N=50 (25 for 100mm/50 for 105mm)				Very dense sandy angular to subangular fine to coarse GRAVEL of mixed lithologies including sandstone and moderate cobble content of sandstone. Sand is medium to coarse.	
		26.30 26.30	D	N=50 (25 for 33mm/50 for 19mm)				Weak red fine to medium grained SANDSTONE destructured recovered as dense sandy angular to subangular gravel. Sand is fine to medium.	
		26.80 26.80	D	N=50 (25 for 20mm/50 for 16mm)	26.80	21.26		Red fine to medium grained SANDSTONE.	27
		27.00		N=50 (25 for 20mm/50 for 35mm)					
		28.00		N=50 (25 for 15mm/50 for 20mm)					
		29.00		N=50 (25 for 10mm/50 for 15mm)					29
									30

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.



Borehole Log

Borehole No.

BH12

Sheet 4 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		30.00		N=50 (25 for 5mm/50 for 10mm)					
		31.00		N=50 (25 for 5mm/50 for 8mm)					31
		32.00		N=50 (25 for 2mm/50 for 4mm)	32.00	16.06			32
								End of borehole at 32.00 m	32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.

