

# A47 Wansford to Sutton Dualling

**Scheme Number: TR010039**

**Volume 9**

**9.42 Supplementary Ground  
Investigations 2022**

**Appendix II Exploratory Logs (Part A)**

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

November 2022

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning  
(Examination Procedure) Rules 2010**

The A47 Wansford to Sutton  
Development Consent Order 202[x]

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**9.42 Supplementary Ground Investigations 2022  
Appendix II Exploratory Logs (Part A)**

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<b>Regulation Number:</b>	Regulation 8(1)(c))
<b>Planning Inspectorate Scheme Reference</b>	TR010039
<b>Application Document Reference</b>	TR010039/EXAM/9.42
<b>Author:</b>	A47 Wansford to Sutton Project Team, National Highways

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
Rev 0	November 2022	Response to the Secretary of State





GROUND TECHNOLOGY



## Appendix II – Exploratory logs



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 15/02/2022
Location:		Contractor: Sweco	Co-ords: E507585.93 N299722.52
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH101</b>	Hole Type RC	Level 32.05m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.30	B						(32.05)	Soft dark brown slightly gravelly sandy CLAY with few fine roots. Sand is fine and medium. Gravel is angular to subangular fine to coarse weathered oolitic limestone.
		0.00 - 0.30	ES						0.30 (31.75)	Brown to orangish brown slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is subangular fine to coarse limestone fragments.
		0.50 - 0.70	B						0.50 (31.55)	Yellowish brown silty very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse weathered limestone. Cobbles are angular to subangular weathered limestone.
		0.50 - 0.70	ES						0.70 (31.35)	Medium dense yellowish brown sandy GRAVEL. Sand is fine to coarse. Gravel is subangular and angular weathered limestone.
		2.10 - 2.20	D						1.20 (30.85)	Yellowish brown very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse weathered limestone. Cobbles are angular to subangular weathered limestone (up to 85 mm).
									3.20 (28.85)	Minimal recovery. Core loss presumed to be more weathered material. Recovered core comprises predominantly medium strong yellowish brown gravel and cobble size fragments of oolitic LIMESTONE with frequent shell fragments.
					23	0	0			

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		2.70	200										

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 6.00 m which was the target depth. The borehole was installed with a temporary slotted standpipe to base with 5 mm gravel surround for variable head testing. SPT Hammer Ref: SIS1.

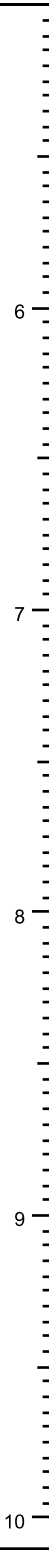


# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 15/02/2022
Location:		Contractor: Sweco	Co-ords: E507585.93 N299722.52
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH101</b>	Hole Type RC	Level 32.05m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.60 - 5.77	CS		40	18	11		6.00	Minimal recovery. Core loss presumed to be more weathered material. Recovered core comprises predominantly medium strong yellowish brown gravel and cobble size fragments of oolitic LIMESTONE with frequent shell fragments.
										End of Borehole at 6.00m



Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 6.00 m which was the target depth. The borehole was installed with a temporary slotted standpipe to base with 5 mm gravel surround for variable head testing. SPT Hammer Ref: SIS1.



GROUND TECHNOLOGY  
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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH101

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>15 / 02 / 22</b>
HOLE ID <b>BH101</b>	DEPTH <b>1.20 m - 3.20 m</b>	CORE RUN <b>DS 01 + DS 02</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH101 1.20 m to 3.20 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>15 / 02 / 22</b>
HOLE ID <b>BH101</b>	DEPTH <b>3.20 m - 6.00 m</b>	CORE RUN <b>03 + 04 (EOSH)</b>

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BH101 3.20 m to 6.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 28/02/2022
Location:		Contractor: Sweco	Co-ords: E507574.42 N299868.47
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH102</b>	Hole Type RC	Level 30.94m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.10 - 0.20	ES						(30.94)	Grass over dark brown clayey slightly sandy gravelly SILT with common fine rootlets. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone and rare fine flint.
		0.30 - 0.35	D						0.35 (30.59)	Orangish brown and light brown very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone.
		0.50 - 0.60	ES							
		1.15 - 1.20 1.20 - 1.65 1.20	D D SPT	N=23 (6,8/7,6,5,5)					1.20 (29.74)	Weak to moderately strong predominantly yellowish brown LIMESTONE recovered as slightly clayey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse quartz and limestone. Cobbles are angular to subangular quartz and limestone (up to 130 mm x 85 mm x 65 mm), (Grade I and II).
		1.60 - 1.70	D		100	0	0			1.85 m to 2.00 m stiff yellowish brown occasionally mottled orangish brown slightly sandy clay. Sand is predominantly fine to medium
		2.00 - 2.45 2.00 2.10 - 2.20	D SPT D	N=19 (6,5/4,4,5,6)						2.00 m to 2.25 m medium dense yellowish brown mottled dark reddish brown slightly sandy clayey gravel. sand is fine to medium. gravel is angular to subangular limestone and quartz
		3.00 - 3.45 3.00	D SPT	N=10 (3,4/3,3,2,2)						
		3.40 - 3.50	D		60	0	0			
		4.00 - 4.45 4.00	D SPT	N=17 (2,3/4,6,4,3)					3.60 (27.34)	AZCL
		4.50 - 4.60	D		100	0	0		4.00 (26.94)	Predominantly yellowish brown LIMESTONE recovered as medium dense slightly clayey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse quartz and limestone. Cobbles are angular to subangular quartz and limestone (up to 120 mm x 85 mm x 60 mm), (Slightly weathered Grade II).
	5.00 - 5.45	D								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.00	Water		100	100
								2.00	3.00	Water			
								3.00	4.00	Water			
								4.00	5.00	Water			

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 10.00 m bgl with bentonite. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 28/02/2022
Location:		Contractor: Sweco	Co-ords: E507574.42 N299868.47
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH102</b>	Hole Type RC	Level 30.94m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.00	SPT	N=27 (3,4/6,6,7,8)					6.40 (24.54)	Predominantly yellowish brown LIMESTONE recovered as medium dense slightly clayey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse quartz and limestone. Cobbles are angular to subangular quartz and limestone (up to 120 mm x 85 mm x 60 mm). (Slightly weathered Grade II).
		6.50 - 6.95 6.50	D SPT	N=13 (2,2/3,3,3,4)	93	0	0		6.50 (24.44)	AZCL Medium dense yellowish brown slightly clayey sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse quartz and limestone. Cobbles are angular to subangular quartz and limestone (up to 130 mm x 85 mm x 65 mm).
		7.00 - 7.15	D		100			7.60 (23.34)	<i>7.0 m to 7.15 m firm reddish brown and yellowish brown slightly gravelly sandy clay. sand is fine to medium. Gravel is subrounded limestone and angular to subangular quartz</i> Medium dense reddish brown fine to medium ferruginous SAND.	
		8.00 - 8.45 8.00	D SPT	N=26 (3,4/5,6,7,8)				8.00 (22.94)	Stiff predominantly light grey occasionally mottled orangish brown SILT.	
		8.20 - 8.30	D		66			8.50 (22.44)	AZCL	
		9.50 - 9.95 9.50	D SPT	N=25 (3,3/5,6,7,7)				9.50 (21.44)	Firm grey silty CLAY shell fragments.	
								10.00	End of Borehole at 10.00m	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		7.00	200					5.00	6.50	Water			
								6.50	8.00	Water			
								8.00	9.50	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 10.00 m bgl with bentonite. SPT Hammer Ref: P2011130 (R9).



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH102

Project ID: GT0386



BH102 1.20 m to 3.00 m



BH102 3.00 m to 5.00 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH102

Project ID: GT0386



BH102 5.00 m to 6.50 m



BH102 6.50 m to 8.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH102

Project ID: GT0386



BH102 8.00 m to 9.50 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 15/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507673.78 N299709.91
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH103</b>	Hole Type RC	Level 30.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.30 0.00 - 0.30	B ES						(30.39)	Brown slightly clayey gravelly SAND with few fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium yellowish brown oolitic limestone.
		0.50 - 0.70 0.50 - 0.70	B ES						0.30 (30.09)	Yellowish brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse oolitic limestone with occasional angular to subangular quartz.
		1.60 - 1.65	D		100	0	0			
		1.90	cSPT	N=88 (2,4/9,19,28,32)						
		2.10 - 3.00	C						2.10 (28.29)	Yellowish brown slightly sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse very weak and weak oolitic limestone with occasional angular to subangular quartz. Cobbles are subrounded fine to coarse weak oolitic limestone.
		2.40 - 2.46	D		100	10	0		2.40 (27.99)	Medium strong to strong light yellowish brown oolitic LIMESTONE recovered as angular and subangular fine to coarse gravel and occasional cobbles. (Moderately weathered Grade III).
		3.00 - 4.50 3.00	C cSPT	N=102 (11,5/19,23,30,30)					3.00 (27.39)	AZCL
		3.91 - 4.00	CS		66	26	0		3.50 (26.89)	Strong light yellowish brown slightly fossiliferous oolitic LIMESTONE with occasional voids (up to 15 mm). Fractures are 15 - 30 degrees very closely to closely spaced (30/70/90) open with slight silt veneer, rough, stepped, reddish brown and greyish brown staining. (Slightly weathered Grade II).
		4.50 - 6.00 4.50	C cSPT	N=100 (12 for 225mm/8,11,31,50)					4.50 (25.89)	AZCL Strong light yellowish brown slightly fossiliferous oolitic LIMESTONE with occasional voids (up to 10 mm). Fractures are 15 - 30 degrees closely spaced (70/110/130 mm) open with slight silt veneer, rough, stepped, reddish brown and greyish brown staining. (Slightly weathered Grade II).
		4.95 - 5.08	CS						4.95 (25.44)	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		3.00	200					2.10 3.00	3.00 4.50	Water Water	orange orange	100 100	100 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was backfilled from ground level to 1.00 m bgl with arisings and from 1.00 m bgl to 15.00 m bgl with bentonite.. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 15/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507673.78 N299709.91
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH103</b>	Hole Type RC	Level 30.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		6.00 - 7.50 6.00	C cSPT	N=24 (5,5/3,5,6,10)	40	40	32		5.55 (24.84)	Strong light yellowish brown slightly fossiliferous oolitic LIMESTONE with occasional voids (up to 10 mm ). Fractures are 15 - 30 degrees closely spaced (70/110/130 mm) open with slight silt veneer, rough, stepped, reddish brown and greyish brown staining. (Slightly weathered Grade II). AZCL
		7.50 - 9.00 7.50	C cSPT	N=31 (6,5/3,9,9,10)	0				7.50 (22.89)	Stiff grey locally laminated CLAY with frequent partings and lenses of light grey silt and fine sand.
		8.60 - 8.70	D						9.00 (21.39)	8.75 m stiff dark brown occasionally black clay with frequent partings and lenses of light grey silt and fine sand AZCL
		9.00 - 10.50 9.00	C cSPT	N=35 (2,4/4,8,11,12)					9.50 (20.89)	9.40 m to 9.50 m occasional subangular to rounded fine to medium gravels of oolitic limestone
		9.50 - 9.60	D		66					Very stiff dark grey and light grey mottled dark reddish brown slightly gravelly silty CLAY with low cobble content and frequent pockets of black silt and fine sand (up to 20 mm x 10 mm). Gravel is angular to subangular fine to coarse limestone. Cobbles are subangular limestone.
		9.80 - 9.90	D							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.50	6.00	Water	orange	60	60
								6.00	7.50	Water	No return	0	0
								7.50	9.00	Water	orange	70	70

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was backfilled from ground level to 1.00 m bgl with arisings and from 1.00 m bgl to 15.00 m bgl with bentonite.. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 15/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507673.78 N299709.91
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH103</b>	Hole Type RC	Level 30.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.50 - 12.00 10.50	C cSPT	N=34 (5,4/5,9,9,11)					10.50 (19.89)	Very stiff dark grey and light grey mottled dark reddish brown slightly gravelly silty CLAY with low cobble content and frequent pockets of black silt and fine sand (up to 20 mm x 10 mm). Gravel is angular to subangular fine to coarse limestone. Cobbles are subangular limestone.  AZCL	
		11.60 - 11.80	D		66	4	0		11.00 (19.39)	Very stiff dark bluish grey and light grey mottled dark reddish brown slightly gravelly silty CLAY with low cobble content and frequent pockets of black silt and fine sand (up to 20 mm x 10 mm). Gravel is angular to subangular fine to coarse limestone with occasional ferruginous nodules (up to 20 mm x 30 mm). Cobbles are subangular limestone.  <u>11.70 m fossil belemnite (7 mm x 30 mm)</u> 11.77 m to 11.84 m strong grey fossiliferous oolitic limestone	11
		12.00 - 12.10 12.00	D cSPT	N=37 (1,3/6,9,9,13)					12.50 (17.89)	AZCL	
		13.50 - 13.60	D		20				13.50 (16.89)	Very stiff dark bluish grey and light grey mottled dark reddish brown slightly gravelly silty CLAY with low cobble content and frequent pockets of black silt and fine sand (up to 20 mm x 10 mm). Gravel is angular to subangular fine to coarse limestone with occasional ferruginous nodules (up to 20 mm x 30 mm). Cobbles are subangular limestone.	
					10				13.80 (16.59)	AZCL	14
								15.00	End of Borehole at 15.00m		15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
12.00	121							9.00 10.50	10.50 12.00	Water Water	orange orange	90 100	90 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was backfilled from ground level to 1.00 m bgl with arisings and from 1.00 m bgl to 15.00 m bgl with bentonite.. SPT Hammer Ref: SIS1.





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH103

Project ID: GT0386



BH103 0.90 m to 2.10 m



BH103 2.10 m to 4.50 m



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH103

Project ID: GT0386



BH103 4.50 m to 7.50 m



BH103 7.50 m to 10.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH103

Project ID: GT0386



BH103 10.50 m to 13.50 m



BH103 13.50 m to 15.00 m







# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507849.28 N299648.91
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH104 &amp; BH104A</b>	Hole Type RC	Level 23.83m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.35 - 5.45	D		100	0	0		5.30 (18.53)	Strong orangish brown occasionally mottled black clayey sandy LIMESTONE. Recovered as angular to subangular fine to coarse gravel with low cobble content. Sand is fine to coarse. Gravel is subangular and angular fine to coarse limestone. Cobbles are angular to subangular medium strong to strong limestone. (Moderately weathered Grade III).
		6.00	SPT	N=25 (2,3/4,7,6,8)					6.00 (17.83)	Firm light and dark grey slightly sandy clayey SILT with low cobble content. Sand is fine to coarse. Gravel is subrounded fine to coarse limestone. Cobbles are subrounded and rounded limestone. Both gravels and cobbles occasional silt filled voids (up to 30 mm x 15 mm). (Moderately weathered grade III).
		6.30 - 6.40	D		100					Stiff dark grey mottled black slightly sandy SILT/CLAY with occasional pockets of orangish brown silt (up to 20 mm x 10 mm) and partings of light grey silt (up to 30 mm x 3 mm). Sand is fine.
		7.00	SPT	N=13 (2,3/3,3,3,4)					7.25 (16.58)	
		7.40 - 7.50	D		100					Medium dense orangish brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium very weak ferruginous cemented sand nodules.
		8.00	cSPT	N=36 (4,9/7,8,10,11)					8.45 (15.38)	No recovery.
		8.30 - 8.40	D		45					
		9.00 - 10.00 9.00	C cSPT	N=34 (3,8/8,8,9,9)					9.00 (14.83)	Very stiff dark grey mottled orangish brown CLAY with rare nodules of weak orangish brown ferruginous medium grained cemented sand (up to 10 mm x 5 mm).
		9.40 - 9.50	D		60				9.60 (14.23)	AZCL
		10.00 - 11.00	C						10.00	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
6.00	121							5.00 9.00	6.00 10.00	Air/Mist Air/Mist	No return grey	100 100	100 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 4.95 m bgl due to the hole becoming blocked (BH104). The hole was repositioned and the borehole was terminated at 20.50 m bgl which was the target depth (BH104A). The borehole was installed with plain pipe from ground level to 4.00 m bgl and slotted pipe from 4.00 m bgl to 9.00 m bgl. The borehole was backfilled from ground level to 4.00 m bgl with bentonite and from 4.00 m bgl to 20.50 m bgl with gravel. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507849.28 N299648.91
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH104 &amp; BH104A</b>	Hole Type RC	Level 23.83m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
█		10.00	SPT	N=49 (4,11/9,11,14,15)					(13.83)	Very stiff dark grey CLAY.
		10.50 - 10.60	D		100					
		11.00 - 12.00 11.00	C SPT	N=36 (3,6/4,8,11,13)						
		11.50 - 11.60	D		100					
		12.00	SPT	N=17 (4,4/4,4,4,5)						12.00 m to 12.45 m becoming stiff
		13.00	SPT	N=42 (4,7/7,8,11,16)	100					
		13.50 - 14.50	C						13.50 (10.33)	Very stiff dark grey CLAY.
		14.10 - 14.20	D		100					
		14.35 - 14.50	D							
		14.50 - 15.50 14.50	C SPT	N=48 (3,8/8,11,11,18)						14.35 m to 14.50 m zone of destructed shales to full diameter with occasional subrounded to rounded fine to coarse limestone gravel

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		13.50	200					13.50	14.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 4.95 m bgl due to the hole becoming blocked (BH104). The hole was repositioned and the borehole was terminated at 20.50 m bgl which was the target depth (BH104A). The borehole was installed with plain pipe from ground level to 4.00 m bgl and slotted pipe from 4.00 m bgl to 9.00 m bgl. The borehole was backfilled from ground level to 4.00 m bgl with bentonite and from 4.00 m bgl to 20.50 m bgl with gravel. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507849.28 N299648.91
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH104 &amp; BH104A</b>	Hole Type RC	Level 23.83m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.10 - 15.20	D	N=71 (4,8/11,13,16,31)	70				15.20 (8.63)	Very stiff dark grey CLAY. AZCL
		15.50 - 17.00 15.50	C SPT						15.50 (8.33)	Very stiff dark grey with occasional reddish brown mottling fossiliferous indistinctly laminated CLAY with isolated pockets of reddish brown silt (up to 15 mm x 10 mm).
		16.20 - 16.50	CS		100					
		16.70 - 17.00	CS							
		17.00 - 17.30 17.00 - 18.50 17.00	CS C cSPT	N=68 (9,9/9,13,17,29)						
		17.50 - 17.65			100					17.50 m to 17.65 m gravels of light grey angular to subangular fine to coarse slightly fossiliferous ferruginous limestone
		18.30 - 18.40	D							
		18.50 - 20.00 18.50	C cSPT	N=88 (10,11/11,19,22,36)						
		18.60 - 18.90	CS							
		19.50 - 19.83	CS		100					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
20.00	121							14.50	15.50	Air/Mist	grey	100	100
								15.50	17.00	Air/Mist	grey	100	100
								17.00	18.50	Air/Mist	grey	100	100
								18.50	20.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 4.95 m bgl due to the hole becoming blocked (BH104). The hole was repositioned and the borehole was terminated at 20.50 m bgl which was the target depth (BH104A). The borehole was installed with plain pipe from ground level to 4.00 m bgl and slotted pipe from 4.00 m bgl to 9.00 m bgl. The borehole was backfilled from ground level to 4.00 m bgl with bentonite and from 4.00 m bgl to 20.50 m bgl with gravel. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507849.28 N299648.91
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH104 &amp; BH104A</b>	Hole Type RC	Level 23.83m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 5 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		20.00	SPT	N=92 (8,14/15,19,19,39)					20.50	Very stiff dark grey with occasional reddish brown mottling fossiliferous indistinctly laminated CLAY with isolated pockets of reddish brown silt (up to 15 mm x 10 mm).	21
										End of Borehole at 20.50m	22
											23
											24
											25

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 4.95 m bgl due to the hole becoming blocked (BH104). The hole was repositioned and the borehole was terminated at 20.50 m bgl which was the target depth (BH104A). The borehole was installed with plain pipe from ground level to 4.00 m bgl and slotted pipe from 4.00 m bgl to 9.00 m bgl. The borehole was backfilled from ground level to 4.00 m bgl with bentonite and from 4.00 m bgl to 20.50 m bgl with gravel. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH104 & BH104A

Project ID: GT0386



BH104 & BH104A 1.20 m to 3.50 m



BH104 & BH104A 3.50 m to 5.50 m





GROUND TECHNOLOGY  
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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH104 & BH104A

Project ID: GT0386



BH104 & BH104A 5.00 m to 6.00 m



BH104 & BH104A 6.00 m to 8.00 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH104 & BH104A

Project ID: GT0386

PROJECT NO <b>GTO386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 02 / 22</b>
HOLE ID <b>BH104 &amp; BH104A</b>	DEPTH <b>8.00 m - 10.00 m</b>	CORE RUN <b>09 - 10</b>
 <b>GROUND TECHNOLOGY</b>	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH104 & BH104A 8.00 m to 10.00 m

PROJECT NO <b>GTO386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 02 / 22</b>
HOLE ID <b>BH104 &amp; BH104A</b>	DEPTH <b>10.00 m - 12.00 m</b>	CORE RUN <b>11 - 12</b>
 <b>GROUND TECHNOLOGY</b>	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH104 & BH104A 10.00 m to 12.00 m





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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH104 & BH104A

Project ID: GT0386



BH104 & BH104A 12.00 m to 13.50 m



BH104 & BH104A 13.50 m to 15.50 m





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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH104 & BH104A

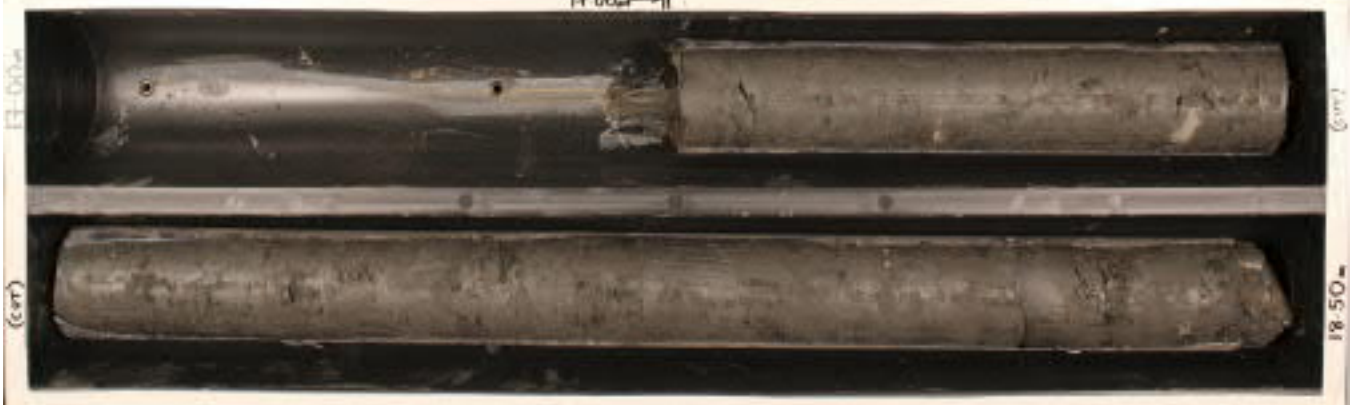
Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 02 / 22</b>
HOLE ID <b>BH104 &amp; BH104A</b>	DEPTH <b>15.50 m - 17.00 m</b>	CORE RUN <b>16</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH104 & BH104A 15.50 m to 17.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 02 / 22</b>
HOLE ID <b>BH104 &amp; BH104A</b>	DEPTH <b>17.00 m - 18.50 m</b>	CORE RUN <b>17</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH104 & BH104A 17.00 m to 18.50 m



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH104 & BH104A

Project ID: GT0386



BH104 & BH104A 18.50 m to 20.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507925.19 N299623.85
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH106</b>	Hole Type RC	Level 20.10m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
No Water Strikes								(20.10)	Dark brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is subangular fine limestone.	
	0.40	ES								
	0.50 - 1.00	B								
	0.60	D								
	0.70	D						(19.40)	Light brown to orangish brown very silty SAND with low cobble content. Sand is fine and medium. Cobbles are subangular medium grained weak limestone.	
	0.80	D								
	0.90	ES								
	1.20 - 1.65	D	N=9 (2,2/2,2,2,3)						1.20 (18.90)	Loose to medium dense orangish brown and yellowish brown SAND. Sand is fine and medium. Rare subangular clasts (< 30 mm) of extremely weakly cemented sand. 1.20 m to 1.80 m slightly mottled light grey fine and medium  1.80 m to 2.00 m slightly silty
	1.20	SPT								
	1.40 - 1.50	D								
	1.50 - 2.00	B			100					
	2.00 - 2.45	D	N=11 (2,2/2,3,3,3)							2.00 m to 2.10 m pocket (< 40 mm) of brown speckled white silty fine sand
	2.00 - 2.80	B								
	2.00	SPT								
	2.40 - 2.50	D			100					
	2.80 - 3.00	D								
3.00 - 3.45	D	N=10 (2,2/2,2,3,3)							2.80 m to 3.00 m diffuse pockets/lenses (< 25 mm) of brown slightly clayey/silty fine sand	
3.00	SPT									
3.25 - 3.35	D									
3.50 - 4.00	B			100						
3.60 - 3.70	D									
4.00 - 4.45	D	N=11 (1,2/2,2,3,4)							Loose to medium dense dark orangish brown slightly gravelly ferruginous SAND. Sand is fine and medium. Gravel is subangular and subrounded medium very weak to weak sandstone. 3.80 m to 4.00 m very weak to weak sandstone	
4.00	SPT									
4.35 - 4.45	D									
4.35 - 4.45	D			100						
4.50 - 4.60	D									
4.65 - 4.75	D									
4.85 - 4.95	D									
5.00 - 5.45	D									

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
5.00	200							1.20	2.00	Water			
								2.00	3.00	Water			
								3.00	4.00	Water			
								4.00	5.00	Water			

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.95 m bgl which was the target depth. The borehole was backfilled with bentonite from 15.95 m bgl to 0.50 m bgl and arisings from 0.50 m to ground level. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 14/02/2022 - 22/02/2022	
Location:		Contractor: Sweco		Co-ords: E507925.19 N299623.85	
Project No. : GT0386		Crew Name: AE / LW		Drilling Equipment: Fraste	

Borehole Number <b>BH106</b>	Hole Type RC	Level 20.10m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.00	SPT	N=5 (1,0/1,1,1,2)						Firm dark grey and light grey thinly interbedded CLAY and SILT locally interlaminated with light grey silt and orange sand. Sand is fine. Bedding and laminations are 10-20 degrees. 5.00 m to 5.50 m softened and disturbed by SPT. Pockets (< 30mm) of black organic/lignitic silty clay evident in SPT sample
		5.70 - 5.80	D		100				5.60 (14.50)	Firm and stiff mottled yellowish brown greyish brown and grey slightly sandy CLAY with occasional partings and lenses of sand and occasional traces of black organic/lignitic matter. Sand is fine and medium.
		6.10 - 6.20	D						6.05 (14.05)	5.95 m to 6.05 m brown to yellowishtobrown sand. Sand is fine to coarse, possibly ferruginous
		6.45 - 6.50 6.50 - 6.95 6.50	D D SPT	N=36 (20,5/6,10,10,10)					6.40 (13.70) 6.50 (13.60)	Firm light grey mottled brown calcareous slightly clayey sandy SILT. Sand is fine and medium. Strong to very strong light grey slightly stained and veined orangish brown highly calcareous SILTSTONE. Rare shells (< 10 mm).
		7.60 - 7.70	CS		42	13	0			Partial recovery (< 50%). Core loss presumed to be more weathered/weaker material. Recovered as grey CLAY and strong to very strong light grey with orangish brown veining highly calcareous SILTSTONE. Fractures are 45-60 degrees and 20 degrees very closely spaced (40/60/100) with heavy dark orangish brown discolouration and possible 1 mm thick band of mineralisation. (Slightly weathered Grade II).
		8.00 - 8.45 8.00	D SPT	N=9 (1,2/2,2,2,3)					8.00 (12.10)	Stiff indistinctly laminated dark grey CLAY with occasional partings and lenses of light grey silt.
		8.70 - 9.00	CS		100					
		9.50 - 9.95 9.50	D SPT	N=13 (2,2/3,3,3,4)						9.05 m to 9.20 m laminations are inclined 15 to 20 degrees

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
6.00	200	6.00	200					5.00	6.50	Water		100	100
								6.50	8.00	Water		100	100
								8.00	9.50	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.95 m bgl which was the target depth. The borehole was backfilled with bentonite from 15.95 m bgl to 0.50 m bgl and arisings from 0.50 m to ground level. SPT Hammer Ref: P2011130 (R9).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507925.19 N299623.85
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH106</b>	Hole Type RC	Level 20.10m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description		
		Depth (m)	Type	Results	TCR	SCR	RQD					
		10.65 - 10.95	CS							Stiff indistinctly laminated dark grey CLAY with occasional partings and lenses of light grey silt.		
		11.00 - 11.45 11.00	D SPT	N=16 (2,3/3,4,4,5)	100				11.00 (9.10)	10.90 m to 11.00 m irregular randomly orientated partings of yellowish grey silt AZCL	11	
		12.10 - 12.25	CS							Stiff indistinctly laminated dark grey CLAY with occasional partings and lenses of light grey silt and rare rounded nodules (< 15 mm) of weak siltstone.	12	
		12.50 - 12.95 12.50	D SPT	N=22 (2,3/4,5,6,7)	100				12.50 (7.60)	12.25 m to 12.30 m pocket (< 50 mm) of subangular and subrounded pyritised nodules (< 10 mm) Very stiff indistinctly laminated locally fissured dark grey CLAY with occasional shell fragments (< 15 mm) and subrounded nodules (15 mm to > 100 mm) of very strong grey calcareous pyritic mudstone and siltstone nodules.	13	
		13.60 - 13.90	CS									
		14.00 - 14.45 14.00	D SPT	N=23 (2,3/5,5,6,7)	100						14.80 m to 15.00 m frequent nodules (15 mm to 80 mm)	14
											15	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.50	11.00	Water		100	100
								11.00	12.50	Water		100	100
								12.50	14.00	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.95 m bgl which was the target depth. The borehole was backfilled with bentonite from 15.95 m bgl to 0.50 m bgl and arisings from 0.50 m to ground level. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507925.19 N299623.85
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH106</b>	Hole Type RC	Level 20.10m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.10 - 15.40	CS							Very stiff indistinctly laminated locally fissured dark grey CLAY with occasional shell fragments (< 15 mm) and subrounded nodules (15 mm to > 100 mm) of very strong grey calcareous pyritic mudstone and siltstone nodules.	
		15.50 - 15.95 15.50	D SPT	N=28 (3,5/6,7,7,8)					15.95		
										End of Borehole at 15.95m	16
											17
											18
											19
											20

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.00	15.50	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.95 m bgl which was the target depth. The borehole was backfilled with bentonite from 15.95 m bgl to 0.50 m bgl and arisings from 0.50 m to ground level. SPT Hammer Ref: P2011130 (R9).



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH106

Project ID: GT0386



BH106 1.20 m to 3.00 m



BH106 3.00 m to 5.00 m





GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH106

Project ID: GT0386



BH106 5.00 m to 6.50 m



BH106 6.50 m to 8.00 m





GROUND TECHNOLOGY  
 Victory Park, Attleborough  
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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH106

Project ID: GT0386



BH106 8.00 m to 9.50 m



BH106 9.50 m to 11.00 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH106

Project ID: GT0386



BH106 11.00 m to 12.50 m



BH106 12.50 m to 14.00 m





GROUND TECHNOLOGY  
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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
 Supplementary GI

BH106

Project ID: GT0386



BH106 14.00 m to 15.50 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 24/02/2022
Location:		Contractor: Sweco	Co-ords: E507887.82 N299666.27
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH105</b>	Hole Type RC	Level 24.61m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
[Well Diagram]		0.10 - 0.20	D	N=63 (10,12/63 for 225mm)				[Pattern]	(24.61)	Dark brown slightly clayey gravelly SAND with few fine rootlets. Sand is fine to coarse. Gravel is angular to subangular fine weak limestone.
		0.20 - 0.30	ES							
		0.20 - 0.70	B							
		0.40 - 0.50	ES							
		0.50 - 0.60	D							
		1.20	cSPT	N=100 (21,16/100 for 180mm)	45	10	0	[Pattern]	1.20 (24.31)	Very weak light brown LIMESTONE. Recovered as gravelly sand with low cobble content. Sand is fine to coarse. Gravel is subangular and angular fine to coarse limestone. Cobbles are angular to subangular limestone.
		1.30 - 1.40	D							
		2.00 - 2.39	D							
		2.00	SPT	N=100 (21,16/100 for 180mm)	70	15	0	[Pattern]	2.40 (22.21)	Medium strong to strong light yellowish brown oolitic LIMESTONE. (Moderately to slightly weathered Grade III and II).
		2.20 - 2.30	D							
	3.00 - 3.17	CS	110 (5,18/110 for 158mm)	90	80	35	[Pattern]	2.80 (21.81)	AZCL	
	3.00	cSPT								
	4.00	cSPT	102 (29,38/102 for 81mm)	10	0	0	[Pattern]	3.00 (21.61)	Medium strong to strong light yellowish brown oolitic LIMESTONE. Fractures are predominantly 15 to 30 degrees very close to closely spaced (25/70/190) predominantly open with yellowish sandy clay. Sand is fine to coarse. (Moderately to slightly weathered Grade III and II).	
	5.00 - 5.45	D								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
1.70	200	1.70	200					1.20	1.50	Water		100	100
3.00	200	3.00	200					1.50	2.00	Water		100	100
								2.00	3.00	Water		100	100
								3.00	4.00	Water		100	100
								4.00	5.00	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth, however a SPT was carried out at the base to 20.45 m. The borehole was installed from ground level to 1.20 m bgl with plain pipe and from 1.20 m bgl with slotted pipe. The borehole was backfilled from ground level to 1.20 m bgl with bentonite, from 1.20 m bgl to 5.90 m bgl with gravel, and with bentonite from 5.90 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 24/02/2022
Location:		Contractor: Sweco	Co-ords: E507887.82 N299666.27
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH105</b>	Hole Type RC	Level 24.61m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.00	SPT	N=19 (2,3/4,4,5,6)				(19.61)	Medium dense orangish brown ferruginous SAND. Sand is fine and medium.	
		5.30 - 5.40	D		100					
		6.10 - 6.20	D					5.88 (18.73)	Stiff light grey occasionally mottled orangish brown SILT. <u>5.90 m to 5.94 m black lignitic slightly sandy clay. Sand is fine</u>	
		6.50 - 6.95 6.50	D SPT	N=21 (1,2/3,5,5,8)				6.30 (18.31)	Stiff dark grey occasionally mottled orangish brown slightly gravelly CLAY with partings of light grey silt (up to 15 mm x 1 mm). Gravel is subrounded to rounded fine to coarse slightly calcareous sandstone and cemented sand nodules.	
		7.10 - 7.30	D		67					
		7.30 - 7.50	CS					7.30 (17.31)	<u>7.25 m to 7.30 m black lignitic clay</u> Medium dense orangish brown sandy SILT. Sand is fine.	
								7.50 (17.11)	AZCL	
		8.00 - 8.45 8.00	D SPT	N=26 (2,3/5,6,7,8)				8.00 (16.61)	Stiff brownish grey slightly sandy CLAY with occasional pockets of lignitic silt (up to 10 mm x 10 mm).	
		8.75 - 9.00	CS		87			8.75 (15.86)	Stiff becoming very stiff orangish brown slightly sandy gravelly CLAY with occasional pockets of black lignitic silt (up to 10 mm x 10 mm). Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse nodules of cemented silty sand.	
		9.10 - 9.28	CS					9.10 (15.51)	Very weak to medium strong light yellowish brown and reddish brown oolitic LIMESTONE. Fractures are predominantly 25 degrees very close to closely spaced (25/70/170) predominantly open with yellowish sandy clay and reddish brown staining. Sand is fine to coarse. (Moderately to slightly weathered Grade III and II).	
		9.50 - 9.96 9.50	D SPT	93 (3,5/93 for 157mm)				9.30 (15.31)		
								9.50 (15.11)	AZCL Very weak to medium strong light yellowish brown and reddish brown oolitic LIMESTONE. Fractures are predominantly 70-90 degrees open with light and dark reddish brown staining. (Moderately to slightly weathered Grade III and II).	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								5.00	6.50	Water		100	100
								6.50	8.00	Water		0	0
								8.00	9.50	Water			

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth, however a SPT was carried out at the base to 20.45 m. The borehole was installed from ground level to 1.20 m bgl with plain pipe and from 1.20 m bgl to 5.90 m bgl with slotted pipe. The borehole was backfilled from ground level to 1.20 m bgl with bentonite, from 1.20 m bgl to 5.90 m bgl with gravel, and with bentonite from 5.90 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 14/02/2022 - 24/02/2022	
Location:		Contractor: Sweco		Co-ords: E507887.82 N299666.27	
Project No. : GT0386		Crew Name: AE / LW		Drilling Equipment: Fraste	

Borehole Number <b>BH105</b>	Hole Type RC	Level 24.61m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description			
		Depth (m)	Type	Results	TCR	SCR	RQD						
		10.20 - 10.30	D						10.40 (14.21)	Very weak to medium strong light yellowish brown and reddish brown oolitic LIMESTONE. Fractures are predominantly 70-90 degrees open with light and dark reddish brown staining. (Moderately to slightly weathered Grade III and II).			
		10.50 - 10.60	D						73			10.60 (14.01)	Stiff dark grey occasionally mottled orangish brown slightly gravelly CLAY with partings of light grey silt (up to 15 mm x 1 mm). Gravel is subrounded to rounded fine to coarse slightly calcareous sandstone and cemented sand nodules.
		11.00 - 11.45 11.00	D SPT	N=13 (1,1/2,2,4,5)						11.00 (13.61)	Firm dark grey occasionally mottled brown slightly gravelly CLAY with partings of light grey silt (up to 10 mm x 1 mm). Gravel is subrounded to rounded fine to coarse slightly calcareous sandstone and siltstone.	11	
		11.60 - 11.78	CS								AZCL		
		12.50 - 12.95 12.50	D SPT	N=22 (2,3/4,5,6,7)							12.00 (12.61)		12
		13.00 - 13.28	CS								12.50 (12.11)	Stiff dark grey indistinctly laminated slightly fossiliferous CLAY with occasional weakly cemented silt nodules (up to 10 mm x 10 mm) and pyrite crystals.	13
		14.00 - 14.10 14.00 - 14.45 14.00	D D SPT	N=24 (2,3/4,5,7,8)									14
										14.60 m to 14.70 m Strong light grey slightly calcareous ferruginous siltstone	15		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.50	11.00	Water		70	70
								11.00	12.50	polymer		0	0
								12.50	14.00	Water		0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth, however a SPT was carried out at the base to 20.45 m. The borehole was installed from ground level to 1.20 m bgl with plain pipe and from 1.20 m bgl to 5.90 m bgl with slotted pipe. The borehole was backfilled from ground level to 1.20 m bgl with bentonite, from 1.20 m bgl to 5.90 m bgl with gravel, and with bentonite from 5.90 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 24/02/2022
Location:		Contractor: Sweco	Co-ords: E507887.82 N299666.27
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH105</b>	Hole Type RC	Level 24.61m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.18 - 15.50	CS	N=31 (3,5/6,7,8,10)	80				16.20 (8.41)	Stiff dark grey indistinctly laminated slightly fossiliferous CLAY with occasional weakly cemented silt nodules (up to 10 mm x 10 mm) and pyrite crystals.
		15.50 - 15.95 15.50	D SPT							
		16.57 - 16.70	CS	N=32 (4,5/6,7,8,11)	100				16.70 (7.91)	Stiff to very stiff dark grey predominantly indistinctly laminated slightly fossiliferous CLAY with occasional weakly cemented silt nodules (up to 10 mm x 10 mm) and pyrite crystals.
		17.00 - 17.45 17.00	D SPT							
		17.50 - 17.80	CS	N=39 (3,5/6,8,10,15)	100					17.82 m to 17.90 m fragments of strong light grey slightly calcareous ferruginous siltstone with occasional quartz vains (up to 30 mm x 2mm)
		18.50 - 18.95 18.50	D SPT							
		19.00 - 19.30	CS							
		20.00 - 20.45	D							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.00	15.50	Water		0	0
								15.50	17.00	Water		0	0
								17.00	18.50	Water		0	0
								18.50	20.00	Water		0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth, however a SPT was carried out at the base to 20.45 m. The borehole was installed from ground level to 1.20 m bgl with plain pipe and from 1.20 m bgl to 5.90 m bgl with slotted pipe. The borehole was backfilled from ground level to 1.20 m bgl with bentonite, from 1.20 m bgl to 5.90 m bgl with gravel, and with bentonite from 5.90 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).





GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH105

Project ID: GT0386



BH105 1.20 m to 2.00 m



BH105 2.00 m to 4.00 m





GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH105

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 03 / 22
HOLE ID BH105	DEPTH 4.0 m - 5.0 m	CORE RUN 5
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH105 4.00 m to 5.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 02 / 03 / 22
HOLE ID BH105	DEPTH 5.0 m - 6.50 m	CORE RUN 6
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH105 5.00 m to 6.50 m



GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH105

Project ID: GT0386



BH105 6.50 m to 8.00 m



BH105 8.00 m to 9.50 m





GROUND TECHNOLOGY  
Victory Park, Attleborough  
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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH105

Project ID: GT0386



BH105 9.50 m to 11.00 m



BH105 11.00 m to 12.50 m





GROUND TECHNOLOGY  
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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH105

Project ID: GT0386



BH105 12.50 m to 14.00 m



BH105 14.00 m to 15.50 m



GROUND TECHNOLOGY  
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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH105

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>02 / 03 / 22</b>
HOLE ID <b>BH105</b>	DEPTH <b>15.50 m - 17.00 m</b>	CORE RUN <b>13</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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15.50m →

(cont)

17.00m

BH105 15.50 m to 17.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>02 / 03 / 22</b>
HOLE ID <b>BH105</b>	DEPTH <b>17.00 m - 18.50 m</b>	CORE RUN <b>14</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

**GROUND TECHNOLOGY**  
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17.00m →

(cont)

18.50m

BH105 17.00 m to 18.50 m





GROUND TECHNOLOGY  
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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH105

Project ID: GT0386



BH105 18.50 m to 20.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:		Contractor: Sweco	Co-ords: E507930.47 N299723.92
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH107</b>	Hole Type RC	Level 27.29m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.70	ES						(27.29)	Greyish brown slightly gravelly sandy clayey SILT. Sand is fine to coarse. Gravel is subangular and subrounded fine and medium yellowish brown limestone.
		0.70 - 1.20 0.70 - 1.20	B J						0.70 (26.59)	Medium strong to strong light yellowish brown and greyish brown sandy LIMESTONE. Recovered as very sandy subangular fine to coarse gravel and occasional cobble. (Moderately to slightly weathered Grade III to Grade II?)
		1.20 - 2.70 1.20	C SPT	50 (8,13/50 for 0mm)					1.20 (26.09)	Minimal recovery. Core loss presumed to be more weathered/weaker material. Recovered core comprises angular to subangular clasts (up to 60 mm) of strong yellowish brown and greyish brown sandy limestone. Some clast surfaces are moderately greyish brown stained.
		2.70 - 4.20 2.70	C SPT	50 (50 for 75mm/50 for 10mm)	7	0	0		2.70 (24.59)	Medium strong to strong yellowish brown to greyish brown sandy LIMESTONE to calcareous SANDSTONE. Sandstone is fine to medium grained. Fractures are 5-10 degrees closely spaced (25/80/190) probably open clean to infilled (0/0/1) with grey and yellow silt and fine sand slightly orangish brown stained. (Slightly weathered Grade II). <i>2.81 m to 3.40 m NI recovered as yellowish brown sand with frequent subangular and subrounded fragments (up to 55 mm) of limestone. Probably drilling disturbed of more fractured or weathered / weaker material</i>
		3.83 - 4.01	CS							
		4.20 - 5.20 4.20	C SPT	50 (50 for 25mm/50 for 0mm)	30	25	0		4.20 (23.09)	No recovery.
									5.00	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.70	Air/Mist	yellow	100	100
								2.70	4.20	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 7.50 m bgl with slotted pipe. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 7.50 m bgl with gravel, and with bentonite from 7.50 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:		Contractor: Sweco	Co-ords: E507930.47 N299723.92
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH107</b>	Hole Type RC	Level 27.29m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.20 - 6.20 5.20 - 6.20 5.20	C SPT	N=23 (3,6/6,5,6,6)					(22.29)	Medium dense to dense light brown to yellowish brown locally mottled light grey slightly gravelly SAND. Sand is fine. Gravel is subangular to subrounded fine limestone. 5.20 m to 5.30 m slightly calcereous	
		6.20 - 7.20 6.20 - 7.20 6.20	B C SPT	N=43 (3,8/8,10,11,14)						6.80 m to 6.95 m extremely weakly cemented	
		7.20 - 8.20 7.20	C SPT	N=29 (4,4/4,6,6,13)							
		7.50 - 7.80	B						7.40 (19.89)	Dense orangish brown very gravelly ferruginous SAND. Sand is fine to medium limestone, locally very weakly to weakly cemented. Gravel is subangular to subrounded fine and medium limestones.	
		7.90 - 8.10	B						7.80 (19.49)	7.65 m to 7.80 m weak to very weak dark orangish brown ferruginous sandstone	
		8.20 - 9.20 8.20	C SPT	N=55 (5,8/11,14,14,16)							Thinly to medium interbedded stiff to very stiff to dark grey mottled yellowish brown slightly sandy very silty CLAY. Locally indistinctly laminated with parting of light grey and brown silt and fine sand. Occasional pockets (up to 5 mm) of black silt/lignite.
		8.90 - 9.10	D								7.80 m to 7.84 m very thin bed of black organic silt/lignite
		9.20 - 10.20 9.20	C SPT	N=53 (4,11/11,12,13,17)							
		9.50 - 9.80	D								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.20	5.20	Air/Mist	yellow	100	100
								5.20	6.20	Air/Mist	yellow	100	100
								6.20	7.20	Air/Mist	yellow	100	100
								7.20	8.20	Air/Mist	orange	100	100
								8.20	9.20	Air/Mist	orange	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 7.50 m bgl with slotted pipe. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 7.50 m bgl with gravel, and with bentonite from 7.50 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:		Contractor: Sweco	Co-ords: E507930.47 N299723.92
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH107</b>	Hole Type RC	Level 27.29m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description		
		Depth (m)	Type	Results	TCR	SCR	RQD					
		10.20 - 11.20 10.20	C cSPT	N=35 (8,8/8,8,8,11)	100				11.20 (16.09)	Thinly to medium interbedded stiff to very stiff to dark grey mottled yellowish brown slightly sandy very silty CLAY. Locally indistinctly laminated with parting of light grey and brown silt and fine sand. Occasional pockets (up to 5 mm) of black silt/lignite.	11	
		10.95 - 11.20	CS							10.15 m to 10.20 m very strong subangular dark brown ferruginous and pyritised cobbles		
		11.20 - 12.20 11.20	C cSPT	N=35 (0,3/7,8,9,11)	85				11.35 (15.94)	10.40 m to 10.50 m extremely weak light brown weakly cemented slightly calcareous silt with clasts (up to 20 mm) of angular very weak siltstone	12	
		11.90 - 12.20	CS							10.50 m to 10.85 m moderately weak to medium strong mottled slightly calcareous subangular mudstone/siltstone gravel		
		12.20 - 13.20 12.20	C cSPT	N=39 (5,6/9,9,10,11)	70				12.20 (15.09)	AZCL	13	
		12.90 - 13.20	CS							Very stiff dark grey indistinctly laminated CLAY with occasional fossil shell fragments (up to 25 mm).		
		13.20 - 14.50 13.20	C cSPT	N=39 (4,6/6,10,10,13)	100				12.50 (14.79)	AZCL	14	
		13.90 - 14.20	CS							Very stiff locally fissured indistinctly laminated dark grey CLAY locally extremely weak thickly laminated to very thinly bedded MUDSTONE with occasional shell fragments (up to 15 mm). Fissures are impersistent planar smooth.		
		14.50 - 16.00 14.50	C cSPT	N=48 (5,9/9,9,11,19)							13.20 m belemnite fossil	15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.20	10.20	Air/Mist	grey	100	100
								10.20	11.20	Air/Mist	grey	100	100
								11.20	12.20	Air/Mist	grey	100	100
								12.20	13.20	Air/Mist	grey	100	100
								13.20	14.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 7.50 m bgl with slotted pipe. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 7.50 m bgl with gravel, and with bentonite from 7.50 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:		Contractor: Sweco	Co-ords: E507930.47 N299723.92
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH107</b>	Hole Type RC	Level 27.29m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.65 - 15.95	CS		100					Very stiff locally fissured indistinctly laminated dark grey CLAY locally extremely weak thickly laminated to very thinly bedded MUDSTONE with occasional shell fragments (up to 15 mm). Fissures are impersistent planar smooth. 15.25 m medium strong brownish grey rounded siltstone nodule (20 mm x 50 mm x 65 mm)	
		16.00 - 17.50 16.00	C cSPT	N=41 (5,8/8,8,12,13)					16.00 (11.29)	AZCL	16
		17.00 - 18.50 17.00	C cSPT	N=36 (4,4/5,8,9,14)	60				16.40 (10.89)	Very stiff locally fissured indistinctly laminated dark grey CLAY to extremely weak thickly laminated to very thinly bedded MUDSTONE with occasional shell fragments (up to 15 mm). Fissures are impersistent planer smooth. 16.40 m to 16.55 m recovered as medium strong to strong grey angular to subangular limestone/calcareous siltstone gravel	
		17.00 - 18.50 17.00	C cSPT	N=36 (4,4/5,8,9,14)					17.00 (10.29)	AZCL	17
		18.18 - 18.45	CS		100				17.30 (9.99)	Very stiff locally fissured indistinctly laminated dark grey CLAY to extremely weak thickly laminated to very thinly bedded MUDSTONE with occasional shell fragments (up to 30 mm). Fissures are impersistent planer smooth.	
		18.50 - 20.00 18.50	C cSPT	N=44 (4,8/8,10,11,15)						18.00 m to 18.10 m occasional impersistent polished shear surface, locally crumbly/ friable texture	18
		19.20	CS		100					18.80 m strong grey subrounded irregular slightly calcareous siltstone/mudstone nodules (40 mm x 50 mm x 80 mm)	19
									20.00	End of Borehole at 20.00m	20

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
20.00	121	18.00	121					14.50	16.00	Air/Mist	grey	100	100
								16.00	17.50	Air/Mist	grey	100	100
								17.00	18.50	Air/Mist	grey	100	100
								18.50	20.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 7.50 m bgl with slotted pipe. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 7.50 m bgl with gravel, and with bentonite from 7.50 m bgl to the base of the borehole. The install was finished with a tophat cover secured in place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH107

Project ID: GT0386



BH107 1.20 m to 2.70 m



BH107 2.70 m to 5.20 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH107

Project ID: GT0386



BH107 5.20 m to 7.20 m



BH107 7.20 m to 9.20 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH107

Project ID: GT0386



BH107 9.20 m to 11.20 m



BH107 11.20 m to 13.20 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH107

Project ID: GT0386



BH107 13.20 m 14.50 m



BH107 14.50 m to 16.00 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH107

Project ID: GT0386



BH107 16.00 m to 17.00 m



BH107 17.00 m to 18.50 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH107

Project ID: GT0386



BH107 18.50 m to 20.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:		Contractor: Sweco	Co-ords: E507940.52 N299808.34
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH108</b>	Hole Type RC	Level 28.54m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.30 0.00 - 0.30	B ES					(28.54)	Dark brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is subangular fine and medium limestone.	
		0.30 - 0.70 0.30 - 0.70	B ES					0.30 (28.24)	Yellowish brown slightly clayey sandy GRAVEL with occasional cobbles. Sand is fine and medium. Gravel is angular and subangular fine to coarse very weak and weak oolitic limestone. Cobbles are subangular limestones.	
		0.95 - 1.65	B		95	0	0	0.95 (27.59)	Moderately weak to medium strong light greyish brown to yellowish brown sandy oolitic LIMESTONE. Fractures are randomly orientated very closely spaced (5/50/70) open infilled (2/5/15) with yellowish brown slightly clayey fine and medium oolitic sand. (Highly to moderately weathered Grade IV to Grade III).	
		1.65 - 3.00 1.65	C cSPT	N=129 (4,5/21,26,32,50)				1.65 (26.89)	AZCL	
		2.17 - 2.25	CS		74	35	0	2.00 (26.54)	Medium strong to strong greyish brown and yellowish brown sandy oolitic LIMESTONE. Fractures are 5-10 degrees and 85-90 degrees closely spaced (50/80/140) open, infilled with clayey sand, undulating rough slightly brown stained. (Slightly weathered Grade II).	
		3.00 - 4.50 3.00	C cSPT	50 (23,27/50 for 25mm)				3.00 (25.54)	Partial recovery. Core loss presumed to be more weathered/weaker material. Medium strong to strong greyish brown and yellowish brown sandy locally oolitic LIMESTONE. Recovered as subangular to subrounded fragments (10 mm to 70 mm) showing frequent irregular voids and cavities and some intact sections of core. Fractures are possibly closely spaced 0-10 degrees and 80-90 degrees possibly open with sandy clay infill slightly orangish brown stained. (Slightly weathered Grade II).	
		4.36 - 4.50 4.50 - 4.95	CS C					4.50 (24.04)	Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered core comprises medium strong to strong greyish brown and yellowish brown sandy locally oolitic LIMESTONE to orangish brown calcareous fine and medium grained SANDSTONE. (Slightly weathered Grade II).	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.65	3.00	Air/Mist	grey	100	100
								3.00	4.50	Air/Mist	grey	100	100
								4.50	4.95	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 5.00 m bgl with bentonite and from 5.00 m bgl to 20.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 22/02/2022 - 25/02/2022	
Location:		Contractor: Sweco		Co-ords: E507940.52 N299808.34	
Project No. : GT0386		Crew Name: JC / DL		Drilling Equipment: Tecop Tec 15	

Borehole Number <b>BH108</b>	Hole Type RC	Level 28.54m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.78 - 5.94	CS							Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered core comprises medium strong to strong greyish brown and yellowish brown sandy locally oolitic LIMESTONE to orangish brown calcareous fine and medium grained SANDSTONE. (Slightly weathered Grade II).	
		6.00	cSPT	N=35 (2,3/3,6,10,16)	20	20	10		6.00 (22.54)	Dense light greyish brown slightly calcareous gravelly SAND. Sand is fine. Gravel is angular medium fine grained limestone.	6
		6.35 - 6.45	D						6.45 (22.09)	<u>6.25 m to 6.35 m plug of very soft grey clay at top of recovery</u>	
		6.50 - 6.90	B		75					Dense light grey light brown and orangish brown locally laminated dark brown slightly silty SAND. Sand is fine and medium.	
		7.00 - 8.00 7.00	B cSPT	N=57 (2,4/7,11,18,21)					6.95 (21.59)	<u>6.70 m to 6.90 m silty</u> <u>6.70 m to 6.80 m orange, yellowish brown and dark brown laminations</u>	7
		8.00	cSPT	N=72 (7,7/10,17,21,24)	100					Very dense thinly laminated to very thinly bedded light greyish brown and yellowish brown silty SAND. Sand is fine and medium.	
		8.40 - 8.90	B		85				8.80 (19.74)	<u>8.40 m to 8.80 m occasional scattered lenses (&lt; 3 mm x 10 mm) of brown and grey clayey silt</u>	8
		8.90 9.00	B cSPT	N=48 (3,4/8,12,14,14)						Very dense orangish brown ferruginous SAND. Sand is fine and medium. Occasional clasts (< 40 mm) of weak sandstone and ironstone.	9
		9.60 - 9.70	D		70				9.40 (19.14)	<u>Firm light grey mottled and veined black slightly organic SILT.</u> <u>9.40 m to 9.43 m very thin bed of black organic silt / lignite</u>	10

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 5.00 m bgl with bentonite and from 5.00 m bgl to 20.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:	Contractor: Sweco	Co-ords: E507940.52 N299808.34
Project No. : GT0386	Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH108</b>	Hole Type RC	Level 28.54m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.00	SPT	N=37 (5,5/10,10,8,9)						Firm light grey mottled and veined black slightly organic SILT.
	▽	10.40 - 10.70	CS		100				10.50 (18.04)	Thinly to medium interbedded light grey SILT and stiff to very stiff grey to dark grey CLAY with locally indistinct laminations and partings of light grey and brown silt and fine sand.
		11.00	SPT	N=49 (4,6/9,12,13,15)						
		11.70 - 12.00	CS		100					11.70 m subrounded pyritic nodule (< 30 mm)
		12.00 - 13.50 12.00	C SPT	N=48 (5,7/10,12,12,14)					12.00 (16.54)	AZCL 12.00 m to 13.50 m recovered core disturbed by drilling, not suitable for sampling
					67				12.60 (15.94)	Thinly to medium interbedded stiff to very stiff grey and dark grey CLAY and brownish grey speckled black clayey SAND. Sand is fine and medium. Occasional irregular pockets (< 10 mm) of black organic silt/lignite and fragments (< 10 mm) of pyritised plant remains.
									13.05 (15.49)	12.85 m to 13.05 m slightly calcareous, with very thin beds of light brown to brown sandy silt, frequent black organic traces, and very weakly cemented clasts (<5 mm) 12.90 m subangular clast (50 mm x 90 mm) of very strong light brown calcareous siltstone
		13.50	SPT	N=51 (0,4/10,11,14,16)						Stiff to very stiff indistinctly laminated locally fissured dark grey CLAY with occasional scattered shells and shell fragments (< 30 mm).
					100					
		14.53 - 14.83	CS							14.30 m 2 no. rounded medium strong dark grey slightly calcareous siltstone/mudstone nodules
		15.00 - 16.50	C							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		10.60	121					12.00	13.50		grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 5.00 m bgl with bentonite and from 5.00 m bgl to 20.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/02/2022 - 25/02/2022
Location:		Contractor: Sweco	Co-ords: E507940.52 N299808.34
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH108</b>	Hole Type RC	Level 28.54m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.00	SPT	N=50 (5,7/10,12,13,15)						<p>Stiff to very stiff indistinctly laminated locally fissured dark grey CLAY with occasional scattered shells and shell fragments (&lt; 30 mm). 15.15 m subrounded very strong grey calcareous siltstone/mudstone nodule (&gt; 60 mm)</p>
		16.20 - 16.50	CS		100					
		16.50 - 18.00 16.50	C SPT	N=57 (4,8/11,13,16,17)						
		17.50 - 17.80	CS		100					
		18.00 - 19.50 18.00	C SPT	N=57 (4,7/11,14,13,19)						
		18.72 - 18.98	CS		100				<p>17.80 m to 17.90 m full core diameter strong grey calcareous siltstone/mudstone with mineralised core. Dense/heavy</p> <p>18.45 m to 18.50 m 2 no. rounded strong grey calcareous siltstone/mudstone nodules 18.62 m to 18.72 m discontinuity inclined 45 to 50 degrees, undulating smooth to polished indistinctly slickensided</p>	
		19.50	SPT	N=57 (5,7/12,14,15,16)						
								20.00	End of Borehole at 20.00m	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
19.50	121							15.00	16.50	Air/Mist	grey	100	100
								16.50	18.00	Air/Mist	grey	100	100
								18.00	19.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 5.00 m bgl with bentonite and from 5.00 m bgl to 20.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH108

Project ID: GT0386



BH108 0.95 m to 3.00 m



BH108 3.00 m to 6.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH108

Project ID: GT0386



BH108 6.00 m to 8.00 m



BH108 8.00 m to 10.00 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH108

Project ID: GT0386



BH108 10.00 m to 12.00 m



BH108 12.00 m to 13.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH108

Project ID: GT0386



BH108 13.50 m to 15.00 m



BH108 15.00 m to 16.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH108

Project ID: GT0386



BH108 16.50 m to 18.00 m



BH108 18.00 m to 19.50 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 17/02/2022 - 22/02/2022	
Location:		Contractor: Sweco		Co-ords: E507949.74 N299847.42	
Project No. : GT0386		Crew Name: JC / DL		Drilling Equipment: Tecop Tec 15	

Borehole Number <b>BH109</b>	Hole Type RC	Level 27.58m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description					
		Depth (m)	Type	Results	TCR	SCR	RQD								
		0.00 - 0.30	B						(27.58)	Dark brown slightly clayey gravelly SAND. Sand is fine to coarse. Gravel is angular to subangular fine weak limestone.					
		0.10 - 0.20	D												
		0.10 - 0.20	ES												
		0.30 - 0.40	ES												
		0.30 - 0.50	B												
		0.40 - 0.50	D												
		1.20	cSPT						N=85 (15,21/15,21,24,25)		70	0	0	1.20 (26.38)	Extremely weak to very weak yellowish brown sandy oolitic LIMESTONE. Sand is fine to coarse. Recovered as sandy GRAVEL with low to medium cobble content. Gravel is subangular and subrounded fine to coarse oolitic limestone. Cobbles are subangular oolitic limestone. (Highly and moderately weathered Grade IV and III).
		1.80 - 1.90	D						50 (50 for 0mm/50 for 0mm)		100	50	0	1.90 (25.68)	Very weak to weak yellowish brown slightly sandy oolitic LIMESTONE with medium cobble content. Sand is fine to medium. Recovered as GRAVEL with low cobble content. Gravel is subangular and subrounded fine to coarse limestone. Cobbles are subangular limestone. (Moderately weathered Grade III).
		1.90 - 3.00	C												
		1.90	cSPT												
2.30 - 2.40	D	50 (50 for 0mm/50 for 0mm)	100	50	0	3.00 (24.58)	Strong light grey to grey oolitic LIMESTONE. (Fresh to slightly weathered Grade I and II).								
3.00 - 3.30	CS														
3.00 - 4.50	C														
3.00	cSPT	50 (50 for 0mm/50 for 0mm)	100	70	40	3.30 (24.28)	Weak and medium strong yellowish brown slightly fossiliferous oolitic LIMESTONE with occasional voids (< 20 mm). Fractures are 15-30 degrees very closely to medium spaced (25/90) open with fine sand infill, rough, stepped. (Slightly and moderately weathered Grade II and III).								
3.70 (23.88)	Strong light grey and grey slightly fossiliferous oolitic LIMESTONE. Fractures are 15-30 degrees closely spaced (80 mm - 180 mm) open with fine sand infill, rough, stepped. (Fresh and slightly weathered Grade I and II).														
4.16 - 4.39						CS									
4.50	cSPT	N=31 (8 for 8mm/6,7,9,9)				4.50 (23.08)	AZCL								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.90	3.00	Air/Mist	white	100	100
								3.00	4.50	Air/Mist	white	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 2.50 m bgl with plain pipe and from 2.50 m bgl to 4.50 m bgl with slotted pipe. The hole was backfilled from ground level to 2.50 m bgl with bentonite and from 2.50 m bgl to 15.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 17/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507949.74 N299847.42
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH109</b>	Hole Type RC	Level 27.58m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.64 - 5.84	CS	N=23 (9 for 9mm/5,5,5,8)	24	20	10		5.64 (21.94)	AZCL	
		6.00 - 7.50 6.00	C cSPT						6.00 (21.58)	Strong light grey and grey slightly fossiliferous oolitic LIMESTONE. Fractures open with fine sand infill, rough, stepped. (Fresh and slightly weathered Grade I and II).	6
		7.30 - 7.50	D	N=26 (7 for 7mm/4,6,7,9)	20					Partial recovery. Core loss presumed to be loose material. Recovered as SAND. Sand is fine.	
		7.50 - 13.50 7.50	C SPT						7.50 (20.08)	Stiff dark grey and grey CLAY with occasional partings of light grey silt (up to 30 mm x 2 mm) and black lignite (up to 40 mm x 2 mm). 7.65 m to 7.75 m light grey and grey occasionally mottled reddish brown grey silt	
		7.65 - 7.75	D								
		9.00 - 10.50 9.00	C SPT	N=34 (8 for 8mm/7,7,9,11)	15				8.16 (19.42)	AZCL	
		9.30 - 9.40	D						9.00 (18.58)	Very stiff dark grey slightly gravelly and grey CLAY with frequent partings and pockets of light grey silt (up to 30 mm x 2 mm) . Gravel is subangular to subrounded fine to coarse ferruginous nodules and cemented calcareous siltstone.	9
					13				9.64 (17.94)	AZCL	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		9.00	121					4.50 6.00	6.00 7.50	Air/Mist	orange orange	100 100	100 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 2.50 m bgl with plain pipe and from 2.50 m bgl to 4.50 m bgl with slotted pipe. The hole was backfilled from ground level to 2.50 m bgl with bentonite and from 2.50 m bgl to 15.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 17/02/2022 - 22/02/2022
Location:		Contractor: Sweco	Co-ords: E507949.74 N299847.42
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH109</b>	Hole Type RC	Level 27.58m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.50 - 12.00 10.50	C SPT	50 (50 for 0mm/50 for 0mm)					10.50 (17.08)	AZCL  Very stiff grey mottled black slightly gravelly sandy CLAY. Sand is fine. Gravel is subangular to subrounded fine to coarse ferruginous nodules and cemented calcareous siltstone.	
		11.10 - 11.50	CS		66	47	40		10.80 (16.78)	Strong light grey slightly fossiliferous calcareous SILTSTONE with predominantly vertical voids (up to 40 mm x 5 mm) infilled with black organic material and silt. (Fresh and slightly weathered Grade I and II).	11
		12.00 - 13.50 12.00	C SPT	N=38 (10 for 10mm/7,8,10,13)					11.50 (16.08)  12.00 (15.58)	AZCL  Strong light grey slightly fossiliferous calcareous SILTSTONE with predominantly vertical voids ( up to 40 mm x 5 mm) infilled with black organic material and silt. Fractures are predominantly 10-25 degrees closely spaced (70/90/150) open with orangish brown fine sand and silt infill, rough, stepped, dark grey and brown staining. (Fresh and slightly weathered Grade I and II).	12
		13.50 - 15.00	C		20	15	10		12.30 (15.28)	12.0 m to 13.5 m strong HCL reaction but no sustained AZCL	13
					0				15.00	End of Borehole at 15.00m	14 15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
15.00	121							9.00	10.50		grey	100	100
								10.50	12.00		grey	100	100
								12.00	13.50		grey	100	100
								7.50	13.50		grey	100	100
								13.50	15.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 2.50 m bgl with plain pipe and from 2.50 m bgl to 4.50 m bgl with slotted pipe. The hole was backfilled from ground level to 2.50 m bgl with bentonite and from 2.50 m bgl to 15.00 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH109

Project ID: GT0386



BH109 1.20 m to 3.00 m



BH109 3.00 m to 4.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH109

Project ID: GT0386



BH109 4.50 m to 7.50 m



BH109 7.50 m to 10.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH109

Project ID: GT0386



BH109 10.50 m to 13.50 m



BH109 13.50 m to 15.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 02/03/2022 - 03/03/2022
Location:		Contractor: Sweco	Co-ords: E507963.91 N299666.43
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH110</b>	Hole Type RC	Level 23.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.50 - 1.00	ES						(23.45) 0.40 (23.05)	Light yellowish brown slightly clayey slightly sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular and subangular fine to coarse medium strong oolitic limestone. Cobbles are angular and subangular medium strong oolitic limestone. Medium strong light yellowish brown LIMESTONE. Recovered as slightly sandy slightly clayey GRAVEL with low cobble content. Gravel is angular and subangular fine to coarse medium strong oolitic limestone. Cobbles are subangular medium strong oolitic limestone. (Moderately weathered Grade III).
		1.20	SPT	N=6 (1,1/1,1,2,2)	0				1.20 (22.25)	AZCL
		2.20	SPT	N=6 (1,1/1,2,1,2)					2.20 (21.25)	Medium strong light yellowish brown sandy oolitic LIMESTONE. Recovered as slightly clayey sandy GRAVEL. Sand is fine and medium. Gravel is subangular to subrounded fine and medium limestone. (No weathering grade assigned due to insufficient sample).
		2.50 - 3.00	B		85				2.50 (20.95)	Loose thinly and thickly laminated yellowish brown slightly silty very gravelly SAND. Sand is fine. Gravel is subangular to subrounded fine and medium limestone. 2.95 m to 3.05 m orangish brown ferruginous with very weakly cemented subrounded clasts (<30 mm)
		3.20	SPT	N=8 (1,3/1,3,2,2)					3.20 (20.25)	3.15 m to 3.20 m mottled greyish brown with clayey pockets/lenses (<10 mm) No recovery.
		4.20	SPT	N=20 (2,5/3,5,5,7)	0				4.20 (19.25)	Medium dense yellowish brown SAND. Sand is fine and medium.
		4.50 - 5.00	B		80					
		5.00 - 5.20	D						5.00	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		5.00	121					1.20	2.20		yellow	100	100
								2.20	3.20		No return	0	0
								3.20	4.20		No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 7.50 m bgl with plain pipe and from 7.50 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 7.50 m bgl with bentonite and from 7.50 m bgl to 10.50 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 02/03/2022 - 03/03/2022	
Location:		Contractor: Sweco		Co-ords: E507963.91 N299666.43	
Project No. : GT0386		Crew Name: MG / GC		Drilling Equipment: Beretta T44	

Borehole Number <b>BH110</b>	Hole Type RC	Level 23.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.20	SPT	N=25 (3,5/5,5,7,8)					(18.45) 5.20 (18.25)	Medium dense thinly and thickly interlaminated light greyish brown and yellowish brown SAND with occasional thin laminations of brown sandy silt. Sand is fine. No recovery.	
		6.00 6.10 - 6.70	SPT B	N=18 (3,5/3,5,5,5)	0				6.00 (17.45)	Medium dense yellowish brown and orangish brown ferruginous gravelly SAND. Sand is fine and medium. Gravel is subrounded to subangular fine and medium limestone.	6
		6.80 - 7.00	D		95				6.80 (16.65)	6.60 m to 6.80 m dark orangish brown locally weakly cemented	
		7.00	SPT	N=21 (3,4/4,5,6,6)					7.00 (16.65)	Thinly to medium interbedded light grey mottled black sandy SILT, stiff dark grey organic CLAY and grey sandy CLAY. Sand is fine. 6.80 m to 6.85 m black organic silt/lignite	7
		7.30 - 7.45	D		74						
		7.57 - 7.87	CS								
		8.00	SPT	N=34 (3,8/8,8,9,9)	0				8.00 (15.45)	AZCL	8
		8.81 - 9.09	CS						8.50 (14.95)	Moderately weak to medium strong grey argillaceous LIMESTONE with occasional scattered fossil shells and shell fragments (< 40 mm) and patches (< 70 mm) of brown staining. Predominantly fractureless. (Slightly weathered to fresh Grade II to I). 8.65 m subhorizontal (<10 degrees) bedding fracture, probably open with grey silt veneer, undulating rough slightly brown stained	9
		9.43 - 9.73	CS		100	50	50		9.25 (14.20)	Very stiff locally laminated dark grey CLAY and extremely weak MUDSTONE with occasional scattered shell fragments (< 15 mm).	10

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.00	121							4.20	5.20		yellow	100	100
								6.00	7.00	Air/Mist	yellow	100	100
								7.00	8.00	Air/Mist	yellow	100	100
								8.50	10.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 7.50 m bgl with plain pipe and from 7.50 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 7.50 m bgl with bentonite and from 7.50 m bgl to 10.50 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.

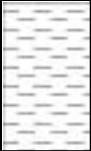




# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 02/03/2022 - 03/03/2022
Location:		Contractor: Sweco	Co-ords: E507963.91 N299666.43
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH110</b>	Hole Type RC	Level 23.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.00	SPT	N=39 (0,4/9,9,10,11)					10.50	Very stiff locally laminated dark grey CLAY and extremely weak MUDSTONE with occasional scattered shell fragments (< 15 mm).	
										End of Borehole at 10.50m	

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 7.50 m bgl with plain pipe and from 7.50 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 7.50 m bgl with bentonite and from 7.50 m bgl to 10.50 m bgl with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH110

Project ID: GT0386



BH110 1.20 m to 3.20 m



BH110 3.20 m to 5.20 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH110

Project ID: GT0386



BH110 5.20 m to 7.00 m



BH110 7.00 m to 8.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH110

Project ID: GT0386



BH110 8.50 m to 10.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/02/2022 - 01/03/2022
Location:		Contractor: Sweco	Co-ords: E507966.68 N299778.75
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH111</b>	Hole Type RC	Level 28.55m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description					
		Depth (m)	Type	Results	TCR	SCR	RQD								
		0.00 - 0.50	B	N=69 (10,14/18,10,11,30)	100	0	0		(28.55)	Soft dark brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse limestone.					
		0.00 - 0.50	ES						0.50 (28.05)		Dense to very dense light orangish brown silty very sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subangular fine to coarse slightly fossiliferous oolitic limestone. Cobbles are angular to subangular slightly fossiliferous oolitic limestone.				
		0.50 - 1.20	B						63 (11,24/63 for 95mm)	100	0	0		1.95 (26.60)	Medium strong to strong light yellowish brown sandy slightly fossiliferous oolitic LIMESTONE. Sand is fine to coarse. Recovered as GRAVEL with low cobble content. Gravel is angular to subrounded fine to coarse limestone. Cobbles are subangular limestone. (Slightly to moderately weathered Grade II and III) .
		0.50 - 1.20	ES											3.20 (25.35)	
		1.20 - 1.30	D											50 (19,31/50 for 20mm)	100
		1.20 - 2.70	C						4.85 - 4.95	D	5.00				
		1.20 - 2.70	C						50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00
		2.20 - 2.70	cSPT												
2.20 - 2.70	cSPT	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
2.70 - 3.30	C								4.85 - 4.95	D	5.00				
2.70 - 3.30	cSPT	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
3.30 - 4.00	C								4.85 - 4.95	D	5.00				
3.30 - 4.00	CS	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
3.40 - 3.50	CS								4.85 - 4.95	D	5.00				
3.40 - 3.50	CS	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
4.00 - 5.50	C								4.85 - 4.95	D	5.00				
4.00 - 5.50	cSPT	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
4.48 - 4.62	CS								4.85 - 4.95	D	5.00				
4.48 - 4.62	CS	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
4.85 - 4.95	D								4.85 - 4.95	D	5.00				
4.85 - 4.95	D	50 (50 for 10mm/50 for 0mm)	100	50	14		4.80 (23.75)	5.00							
4.85 - 4.95	D								4.85 - 4.95	D	5.00				

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.70	Air/Mist	yellow	100	100
								2.20	2.70	Air/Mist	yellow	100	100
								2.70	3.30	Air/Mist	yellow	100	100
								3.30	4.00	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 3.00 m bgl with plain pipe and from 3.00 m bgl to 8.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 3.00 m bgl with bentonite, from 3.00 m bgl to 8.00 m bgl with gravel, and with bentonite from 8.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/02/2022 - 01/03/2022
Location:		Contractor: Sweco	Co-ords: E507966.68 N299778.75
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH111</b>	Hole Type RC	Level 28.55m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
								(23.55)	No recovery.	
		5.50 - 6.50 5.50	C cSPT	N=79 (10,10/10,19,24,26)				5.50 (23.05)	Dense to very dense light yellowish brown with occasional dark reddish brown stained SAND. Sand is fine.	
		5.90 - 6.00	D		100					
		6.50 - 7.50 6.50	C cSPT	N=83 (8,11/18,19,20,26)				6.35 (22.20)	Dense to very dense dark yellowish brown and dark reddish brown slightly silty slightly gravelly SAND. Sand is fine. Gravel is subangular fine and medium limestone.	
		7.00 - 7.10	D		80					
		7.50 - 8.50 7.50 - 8.50 7.50	C C cSPT	N=68 (8,8/8,14,22,24)				7.30 (21.25) 7.50 (21.05)	No recovery. Very dense dark reddish brown slightly silty ferruginous SAND. Sand is fine.	
		7.70 - 7.80	D		100					
		8.20 - 8.30	D					8.00 (20.55)	Very stiff light and dark grey mottled orangish brown SILT with black lignite and remnants of roots (up to 25 mm x 2 mm).	
		8.50 - 9.50 8.50	C cSPT	N=57 (8,9/10,10,14,23)				8.74 (19.81)	Very stiff dark grey and black occasionally mottled orangish brown slightly sandy SILT/ CLAY with pockets of black lignitic silt (up to 10 mm x 10 mm). Sand is fine.	
		9.00 - 9.10	D		100				9.18 m to 9.28 m very stiff light grey silt	
		9.50 - 11.00 9.50 - 9.70 9.50	C CS cSPT	N=54 (7,10/10,12,16,16)				9.85 (18.70)	Very dense orangish and reddish brown slightly clayey sandy GRAVEL with occasional pockets of black decomposed organic material (lignite up to 15 mm x 10 mm). Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse ferruginous siltstone and fossiliferous limestone.	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.00	5.50	Air/Mist	yellow	100	100
								5.50	6.50	Air/Mist	yellow	100	100
								6.50	7.50	Air/Mist	yellow	100	100
								7.50	8.50	Air/Mist	yellow	100	100
								8.50	9.50	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 3.00 m bgl with plain pipe and from 3.00 m bgl to 8.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 3.00 m bgl with bentonite, from 3.00 m bgl to 8.00 m bgl with gravel, and with bentonite from 8.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/02/2022 - 01/03/2022
Location:		Contractor: Sweco	Co-ords: E507966.68 N299778.75
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH111</b>	Hole Type RC	Level 28.55m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		11.00 - 12.00 11.00	C cSPT	N=29 (3,4/4,7,8,10)	48			[Pattern]	10.28 (18.27)	Very dense orangish and reddish brown slightly clayey sandy GRAVEL with occasional pockets of black decomposed organic material (lignite up to 15 mm x 10 mm). Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse ferruginous siltstone and fossiliferous limestone. No recovery.	11
	11.40 - 11.60	CS		60							
	12.00 - 13.50 12.00	C cSPT	N=31 (5,6/6,6,8,11)		100			[Pattern]		11.60 (16.95)	AZCL
	12.90 - 13.00	D		100							[Pattern]
	13.50 - 15.00 13.50	C cSPT	N=37 (5,7/7,8,9,13)		100			[Pattern]			
	14.70 - 15.00	CS									
								15.00	End of Borehole at 15.00m		15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
11.00	121	12.00	121					9.50	11.00	Air/Mist	grey	100	100
								11.00	12.00		grey	100	100
								12.00	13.50		grey	100	100
								13.50	15.00		grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 3.00 m bgl with plain pipe and from 3.00 m bgl to 8.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 3.00 m bgl with bentonite, from 3.00 m bgl to 8.00 m bgl with gravel, and with bentonite from 8.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH111

Project ID: GT0386



BH111 1.20 m to 2.70 m



BH111 2.70 m to 4.00 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH111

Project ID: GT0386



BH111 4.00 m to 5.50 m



BH111 5.50 m to 7.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH111

Project ID: GT0386



BH111 7.50 m to 9.50 m



BH111 9.50 m to 12.00 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH111

Project ID: GT0386



BH111 12.00 m to 13.50 m



BH111 13.50 m to 15.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/04/2022 - 26/04/2022
Location:		Contractor: Sweco	Co-ords: E508321.23 N299709.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH112</b>	Hole Type RC	Level 17.49m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		0.10 - 0.20	ES						17.49	Soft dark grey bluish grey and orangish brown slightly gravelly sandy CLAY with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine flint.	
		0.35 - 0.45	D					17.29			
		0.50 - 0.60	ES		100						
		1.60 - 1.70	D		90				0.88 (16.61)	Stiff light brown mottled dark reddish brown slightly gravelly sandy CLAY. Sand is fine. Gravels are predominantly subrounded to rounded fine to coarse limestone and cemented nodules of silt (up to 40 mm x 25 mm) with occasional angular fine to coarse flint (up to 40 mm x 20 mm)	1
		2.00	SPT	N=15 (1,4/4,3,4,4)					1.90 (15.59)	Medium dense orangish brown slightly silty slightly gravelly SAND. Sand is fine to coarse. Gravel is predominantly subrounded to rounded fine to coarse occasionally tabular limestone and cemented nodules of silt (up to 40 mm x 25 mm) with occasional angular fine to coarse flint (up to 40 mm x 20 mm)	2
		2.20 - 2.40	B		100						
		3.00	SPT	N=25 (3,4/4,4,8,9)						<u>3.45 m to 3.60 m medium dense orangish brown fine sand</u>	3
					100						
		3.80 - 3.90	D						3.60 (13.89)	Medium dense orangish brown mottled dark reddish brown clayey fine to medium SAND.	
		4.00	SPT	N=20 (4,4/4,5,5,6)						Medium dense orangish brown occasionally dark reddish brown slightly silty very sandy GRAVEL. Sand is fine to coarse. Gravel is predominantly subrounded to rounded occasionally tabular fine to coarse limestone and flint (up to 40 mm x 25 mm).	4
		4.40 - 4.80	B		100				4.10 (13.39)		
		5.00	SPT	N=20 (4,4/4,5,5,6)							5

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/04/2022 - 26/04/2022
Location:		Contractor: Sweco	Co-ords: E508321.23 N299709.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH112</b>	Hole Type RC	Level 17.49m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.67 - 6.00	CS		100				5.40 (12.09)	Medium dense orangish brown occasionally dark reddish brown slightly silty very sandy GRAVEL. Sand is fine to coarse. Gravel is predominantly subrounded to rounded occasionally tabular fine to coarse limestone and flint (up to 40 mm x 25 mm).	
		6.00	SPT	N=29 (3,5/5,7,8,9)						Stiff bluish grey predominantly indistinctly laminated slightly gravelly CLAY with occasional partings of light grey silt and occasional pockets of light grey cemented silt (up to 10 mm x 10 mm). Gravels are angular to subangular fine to coarse Limestone with quartz veins (up to 5 mm x 2 mm)	6
		6.70 - 6.80	CS		75						7
		7.50	SPT	N=30 (5,6/6,6,8,10)							
		8.00 - 8.22	CS		70						8
		9.00	SPT	N=40 (6,6/8,10,11,11)							9
		10.00 - 10.22	CS		100						10

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		6.00	121										

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/04/2022 - 26/04/2022
Location:		Contractor: Sweco	Co-ords: E508321.23 N299709.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH112</b>	Hole Type RC	Level 17.49m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.50	SPT	N=39 (5,8/8,9,10,12)						Stiff bluish grey predominantly indistinctly laminated slightly gravelly CLAY with occasional partings of light grey silt and occasional pockets of light grey cemented silt (up to 10 mm x 10 mm). Gravels are angular to subangular fine to coarse Limestone with quartz veins (up to 5 mm x 2 mm)
		11.00 - 11.25	CS		100				11	
		13.33 - 13.50	CS		100				12	
		14.00 - 14.15	CS		96				13	
									13.00 (4.49)	Very stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey slightly fossiliferous CLAY with light grey partings of silt (25 mm x 2 mm) and occasional nodules of light grey cemented slightly calcareous silt (up to 30 mm x 10 mm).
										14
										15

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.50	121												

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 25/04/2022 - 26/04/2022
Location:		Contractor: Sweco	Co-ords: E508321.23 N299709.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH112</b>	Hole Type RC	Level 17.49m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.50 - 15.72	CS		93					Very stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey slightly fossiliferous CLAY with light grey partings of silt (25 mm x 2 mm) and occasional nodules of light grey cemented slightly calcareous silt (up to 30 mm x 10 mm).
		17.80 - 18.00	CS		100					
		18.50 - 18.60	CS		93					
					100				20.00	End of Borehole at 20.00m

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH112

Project ID: GT0386

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>28 / 04 / 22</b>
HOLE ID <b>BH112</b>	DEPTH <b>GL</b> - <b>2.00</b> m	CORE RUN <b>1</b>



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Grey Scale



Colour Control Patches



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BH112 0.00 m to 2.00 m

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>28 / 04 / 22</b>
HOLE ID <b>BH112</b>	DEPTH <b>2.00</b> - <b>4.00</b> m	CORE RUN <b>3 / 4</b>



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BH112 2.00 m to 4.00 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH112

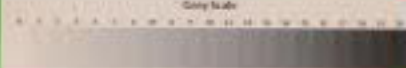
Project ID: GT0386

PROJECT NO: <b>GT 0386</b>	PROJECT NAME: <b>WANSFORD-SUTTON</b>	DATE: <b>28 / 04 / 22</b>
HOLE ID: <b>BH112</b>	DEPTH: <b>4.00 m - 6.00 m</b>	CORE RUN: <b>5 / 6</b>




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BH112 4.00 m to 6.00 m

PROJECT NO: <b>GT 0386</b>	PROJECT NAME: <b>WANSFORD-SUTTON</b>	DATE: <b>28 / 04 / 22</b>
HOLE ID: <b>BH112</b>	DEPTH: <b>6.00 m - 7.50 m</b>	CORE RUN: <b>7</b>



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BH112 6.00 m to 7.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH112

Project ID: GT0386



BH112 7.50 m to 9.00 m



BH112 9.00 m to 10.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH112

Project ID: GT0386



BH112 10.50 m to 12.00 m



BH112 12.00 m to 13.50 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH112

Project ID: GT0386



BH112 13.50 m to 15.00 m



BH112 15.00 m to 16.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH112

Project ID: GT0386

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>28 / 04 / 22</b>
HOLE ID <b>BH112</b>	DEPTH <b>16.50 m - 18.00 m</b>	CORE RUN <b>14</b>

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Grey Scale

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BH112 16.50 m to 18.00 m

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>28 / 04 / 22</b>
HOLE ID <b>BH112</b>	DEPTH <b>18.00 m - 19.50 m</b>	CORE RUN <b>15</b>

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Grey Scale

Colour Control Patches

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BH112 18.00 m to 19.50 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH112

Project ID: GT0386



BH112 19.50 m to 20.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 21/02/2022 - 12/04/2022
Location:		Contractor: Sweco	Co-ords: E508529.58 N299632.31
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH113</b>	Hole Type RC	Level 9.24m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		0.10 0.10	B ES					(9.24)	Soft dark grey bluish grey and orangish brown slightly gravelly sandy CLAY with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine flint.		
		0.50 0.50	B ES					0.50 (8.74)	Firm bluish grey mottled orangish brown slightly sandy slightly silty CLAY. Sand is fine to coarse.		
		1.00 1.00	B ES					2.00 (7.24)	Medium strong yellowish brown LIMESTONE. Recovered as light brown slightly silty slightly clayey very gravelly SAND with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone. Cobbles are subangular limestone.	1	
		1.50 - 1.95 1.50	D SPT	N=2 (1,1/0,1,0,1)							
		2.00	B							2	
		2.50 - 3.00 2.50	B cSPT	N=44 (1,2/5,9,15,15)							
		3.50 - 4.00 3.50	B cSPT	N=49 (3,5/9,10,13,17)							
		4.00 - 4.50	B						4.00 (5.24)	Very stiff dark grey slightly gravelly slightly sandy slightly silty CLAY.	3
	5.00 - 6.50	C						5.00		4	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
4.50	200	4.50	200										

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 21/02/2022 - 12/04/2022
Location:		Contractor: Sweco	Co-ords: E508529.58 N299632.31
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH113</b>	Hole Type RC	Level 9.24m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.30 - 5.50	CS		100				(4.24)	Stiff becoming very stiff with depth predominantly indistinctly laminated occasionally horizontally laminated (up to +/- 30 degrees ) dark grey with slight greenish grey hue slightly silty slightly fossiliferous CLAY with occasional nodules of light grey cemented silt (up to 20 mm x 15 mm) and occasional horizontal partings of light grey silt (up to 2 mm x 1 mm).
		6.50 - 8.00 6.50	C SPT	N=33 (7,7/7,8,9,9)	100					
		7.77 - 8.00	CS							
		8.00 - 9.50 8.00	C SPT	N=40 (6,8/8,8,11,13)	100					
		9.27 - 9.50	CS							
		9.50 - 11.00 9.50	C SPT	N=46 (8,10/10,10,12,14)	100					9.95 m to 10.00 m very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous limestone

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								5.00	6.50	Air/Mist	grey	100	100
								6.50	8.00	Air/Mist	grey	100	100
								8.00	9.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 21/02/2022 - 12/04/2022
Location:		Contractor: Sweco	Co-ords: E508529.58 N299632.31
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH113</b>	Hole Type RC	Level 9.24m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description		
		Depth (m)	Type	Results	TCR	SCR	RQD					
		10.40 - 10.70	CS						10.70 (-1.46)	Stiff becoming very stiff with depth predominantly indistinctly laminated occasionally horizontally laminated (up to +/- 30 degrees ) dark grey with slight greenish grey hue slightly silty slightly fossiliferous CLAY with occasional nodules of light grey cemented silt (up to 20 mm x 15 mm) and occasional horizontal partings of light grey silt (up to 2 mm x 1 mm).		
		11.00 - 12.50 11.00	C SPT	N=59 (11,10/10,12,18,19)					11.00 (-1.76)	Very stiff becoming very stiff with depth predominantly indistinctly laminated occasionally horizontally laminated (up to +/- 30 degrees ) dark grey with slight greenish grey hue slightly silty slightly fossiliferous CLAY with occasional nodules of light grey cemented silt (up to 20 mm x 15 mm) and occasional horizontal partings of light grey silt (up to 2 mm x 1 mm).	11	
		12.00 - 12.25	CS									12
		12.50	SPT	N=71 (10,12/12,16,19,24)								
		13.00 - 13.10	CS									13
		13.90 (-4.66)								14.00 (-4.76)	AZCL	
	15.00 - 15.24	CS								Very stiff with depth predominantly indistinctly laminated occasionally horizontally laminated (up to +/- 30 degrees ) dark grey with slight greenish grey hue slightly silty slightly fossiliferous CLAY with occasional nodules of light grey cemented silt (up to 20 mm x 15 mm) and occasional horizontal partings of light grey silt (up to 2 mm x 1 mm).	14	
											15	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
12.50	121							9.50 11.00	11.00 12.50	Air/Mist Air/Mist	grey grey	100 100	100 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 21/02/2022 - 12/04/2022
Location:		Contractor: Sweco	Co-ords: E508529.58 N299632.31
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH113</b>	Hole Type RC	Level 9.24m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		17.00 - 17.25	CS		100					Very stiff with depth predominantly indistinctly laminated occasionally horizontally laminated (up to +/- 30 degrees ) dark grey with slight greenish grey hue slightly silty slightly fossiliferous CLAY with occasional nodules of light grey cemented silt (up to 20 mm x 15 mm) and occasional horizontal partings of light grey silt (up to 2 mm x 1 mm).
		18.20 - 18.34	CS		93					
		19.00 - 19.15	CS		100					
								18.40 (-9.16)	AZCL	Very stiff with depth predominantly indistinctly laminated occasionally horizontally laminated (up to +/- 30 degrees ) dark grey with slight greenish grey hue slightly silty slightly fossiliferous CLAY with occasional nodules of light grey cemented silt (up to 20 mm x 15 mm) and occasional horizontal partings of light grey silt (up to 2 mm x 1 mm).
								18.50 (-9.26)		
								20.00	End of Borehole at 20.00m	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to 20.00 m bgl with bentonite. SPT Hammer Ref: SIS1.



GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH113

Project ID: GT0386

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>22 / 04 / 22</b>
HOLE ID <b>BH113</b>	DEPTH <b>5.00 m - 6.50 m</b>	CORE RUN <b>1</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Patches</small>	



BH113 5.00 m to 6.50 m

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>22 / 04 / 22</b>
HOLE ID <b>BH113</b>	DEPTH <b>6.50 m - 8.00 m</b>	CORE RUN <b>2</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Patches</small>	



BH113 6.50 m to 8.00 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH113

Project ID: GT0386

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>22 / 04 / 22</b>
HOLE ID <b>BH113</b>	DEPTH <b>8.00 m - 9.50 m</b>	CORE RUN <b>3</b>
 <b>GROUND TECHNOLOGY</b>	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m		



BH113 8.00 m to 9.50 m

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>22 / 04 / 22</b>
HOLE ID <b>BH113</b>	DEPTH <b>9.50 m - 11.00 m</b>	CORE RUN <b>4</b>
 <b>GROUND TECHNOLOGY</b>	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m		



BH113 9.50 m to 11.00 m



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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH113

Project ID: GT0386

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>22 / 04 / 22</b>
HOLE ID <b>BH113</b>	DEPTH <b>11.00 m - 12.50 m</b>	CORE RUN <b>5</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH113 11.00 m to 12.50 m

PROJECT NO <b>GT 0386</b>	PROJECT NAME <b>WANSFORD-SUTTON</b>	DATE <b>25 / 04 / 22</b>
HOLE ID <b>BH113</b>	DEPTH <b>12.50 m - 14.00 m</b>	CORE RUN <b>6</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH113 12.50 m to 14.00 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH113

Project ID: GT0386



BH113 14.00 m to 15.50 m



BH113 15.50 m to 17.00 m





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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH113

Project ID: GT0386



BH113 17.00 m to 18.50 m



BH113 18.50 m to 20.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 08/03/2022 - 11/03/2022	
Location:		Contractor: Sweco		Co-ords: E508799.29 N299644.15	
Project No. : GT0386		Crew Name: MG / GC		Drilling Equipment: Beretta T44	

Borehole Number <b>BH114</b>	Hole Type RC	Level 10.66m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.40	ES					(10.66)	Grass over dark brown clayey slightly sandy slightly gravelly SILT with common fine rootlets and few coarse roots. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse flint.	
		0.40 - 1.20	ES					0.40 (10.26)	Orangish brown and light brown clayey very gravelly SAND. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse flint and rare weathered limestone.	
		1.20 - 2.20 1.20	C cSPT	N=31 (3,6/6,5,10,10)	100				1.20 (9.46)	Loose to medium dense orangish brown slightly silty sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded quartzite, siltstone, sandstone and limestone.
		1.30 - 1.40	D							
		2.20 - 3.00 2.20	C cSPT	N=50 (50,0/50,0,0,0)	63	0	0		2.20 (8.46)	Medium strong to strong light and dark grey fine to medium grained slightly fossiliferous ferruginous LIMESTONE. Recovered as subangular fine to coarse gravel and subangular cobbles. (Moderately to highly weathered Grade III and IV).
		2.60 - 2.70	D							
		3.00 - 4.00 3.00	C cSPT	N=13 (2,3/3,3,3,4)	75				2.70 (7.96)	Very stiff indistinctly laminated dark grey slightly fossiliferous CLAY. AZCL
		3.75 - 4.00								
		4.00 - 5.00 4.00	C SPT	N=15 (2,3/3,4,4,4)	65				3.00 (7.66)	Firm indistinctly laminated dark grey slightly fossiliferous CLAY.
		4.50 - 4.65	CS							
	5.00 - 6.00	C						4.00 (6.66)	Firm to stiff indistinctly laminated dark grey slightly fossiliferous CLAY.	
								4.65 (6.01)	AZCL	
								5.00		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	yellow	100	100
								2.20	3.00	Air/Mist	grey	100	100
								3.00	4.00	Air/Mist	grey	100	100
								4.00	5.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 5.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and with bentonite from 5.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 08/03/2022 - 11/03/2022
Location:		Contractor: Sweco	Co-ords: E508799.29 N299644.15
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH114</b>	Hole Type RC	Level 10.66m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.00	cSPT	N=19 (3,4/4,4,5,6)					(5.66)	Firm to very stiff indistinctly laminated dark grey slightly fossiliferous CLAY with light grey partings of silt (25 mm x 1 mm) and occasional nodules of light grey cemented slightly calcareous silt (up to 30 mm x 10 mm).
		5.50 - 5.80	CS		100					
		6.00 - 7.50 6.00	C cSPT	N=24 (3,5/5,6,6,7)					6	
		6.60 - 6.80	CS		100				7	
		7.50 - 9.00 7.50	C cSPT	N=43 (4,9/9,9,11,14)					8	
		8.50 - 8.70	CS						9	
		9.00 - 10.50 9.00	C cSPT	N=36 (3,6/6,6,11,13)					9	
	9.50 - 9.70	CS		67			10			
								10.00	10	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								5.00	6.00	Air/Mist	grey	100	100
								6.00	7.50	Air/Mist	grey	100	100
								7.50	9.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 5.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and with bentonite from 5.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 08/03/2022 - 11/03/2022
Location:		Contractor: Sweco	Co-ords: E508799.29 N299644.15
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH114</b>	Hole Type RC	Level 10.66m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
									(0.66)	AZCL	
		10.50 - 12.00 10.50	C cSPT	N=46 (4,11/10,11,11,14)					10.50 (0.16)	Firm to very stiff indistinctly laminated occasionally horizontally laminated (+/- 20 degrees) dark grey slightly fossiliferous CLAY with light grey partings of silt (25 mm x 1 mm) and occasional nodules of light grey cemented slightly calcareous silt (up to 30 mm x 10 mm).	11
		11.00 - 11.20	CS		93						
		12.00 - 13.50 12.00	C SPT	N=45 (5,8/9,9,11,16)					11.90 (-1.24) 12.00 (-1.34)	AZCL Very stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey slightly fossiliferous CLAY with light grey partings of silt (25 mm x 1 mm) and occasional nodules of light grey cemented slightly calcareous silt (up to 30 mm x 10 mm).	12
		12.50 - 12.72	CS		100						13
		13.50 - 15.00 13.50	C SPT	N=44 (5,9/8,10,11,15)							
		14.00 - 14.30	CS		100						14
		14.85 - 15.00	CS								
		15.00 - 16.50	C								15

14.40 m to 14.55 m several fossilised ammonites (up to 50 mm x 50 mm x 10 mm) and 4 No fossilised bitovalves (up to 20 mm x 10 mm x 8mm)

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		12.00	121					9.00	10.50	Air/Mist	grey	100	100
								10.50	12.00	Air/Mist	grey	100	100
								12.00	13.50	Air/Mist	grey	100	100
								13.50	15.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 5.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and with bentonite from 5.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 08/03/2022 - 11/03/2022
Location:		Contractor: Sweco	Co-ords: E508799.29 N299644.15
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH114</b>	Hole Type RC	Level 10.66m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.00	SPT	N=47 (6,8/8,10,13,16)						Very stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey slightly fossiliferous CLAY with light grey partings of silt (25 mm x 1 mm) and occasional nodules of light grey cemented slightly calcareous silt (up to 30 mm x 10 mm).
		15.50 - 15.65	CS		100					
		16.50 - 18.00 16.50	C SPT	N=51 (9,9/10,10,12,19)						
		17.00 - 17.22	CS		93					
		18.00 - 19.50 18.00	C SPT	N=53 (7,9/9,11,13,20)						
		18.50 - 18.68	CS		100					
		19.50	SPT	N=42 (8,8/8,8,12,14)						
								17.90 (-7.24) 18.00 (-7.34)	AZCL	
								20.00	End of Borehole at 20.00m	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
19.50	121							15.00	16.50	Air/Mist	grey	100	100
								16.50	18.00	Air/Mist	grey	100	100
								18.00	19.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 5.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and with bentonite from 5.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



GROUND TECHNOLOGY  
Victory Park, Attleborough  
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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH114

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 03 / 22</b>
HOLEID <b>BH114</b>	DEPTH <b>1.20 m - 3.00 m</b>	CORE RUN <b>1 - 2</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 1.20 m to 3.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 03 / 22</b>
HOLEID <b>BH114</b>	DEPTH <b>3.00 m - 5.00 m</b>	CORE RUN <b>3 - 4</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 3.00 m to 5.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH114

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 16 / 03 / 22
HOLE ID BH114	DEPTH 5.00 m - 6.00 m	CORE RUN 5
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 5.00 m to 6.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 16 / 03 / 22
HOLE ID BH114	DEPTH 6.00 m - 7.50 m	CORE RUN 6
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 6.00 m to 7.50 m



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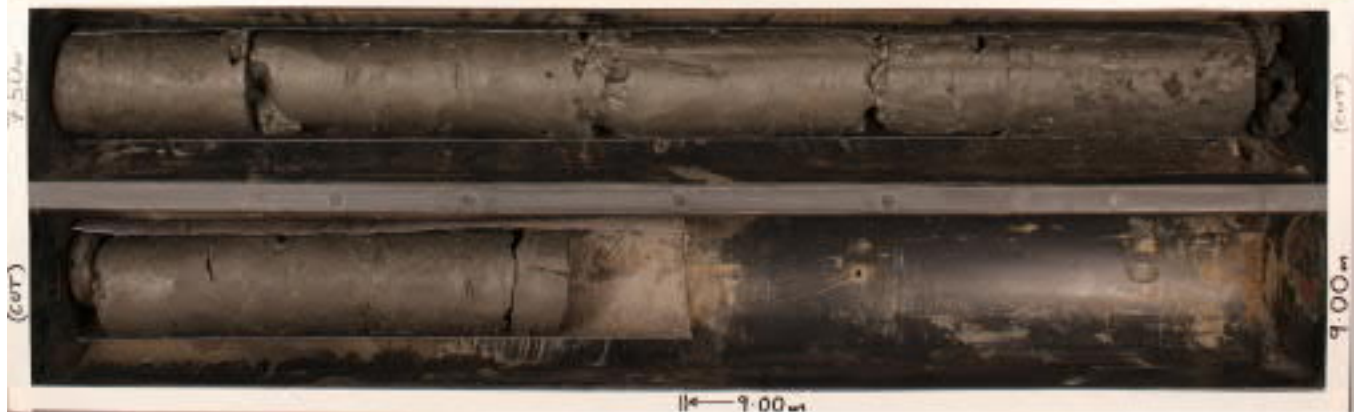
# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH114

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 03 / 22</b>
HOLE ID <b>BH114</b>	DEPTH <b>7.50 m - 9.00 m</b>	CORE RUN <b>7</b>
	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 7.50 m to 9.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 03 / 22</b>
HOLE ID <b>BH114</b>	DEPTH <b>9.00 - 10.50 m</b>	CORE RUN <b>8</b>
	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 9.00 m to 10.50 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH114

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 16 / 03 / 22
HOLE ID BH114	DEPTH 10.50 - 12.00 m	CORE RUN 9
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 10.50 m to 12.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 16 / 03 / 22
HOLE ID BH114	DEPTH 12.00 - 13.50 m	CORE RUN 10
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 12.00 m to 13.50 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH114

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 17 / 03 / 22
HOLE ID BH114	DEPTH 13.50 m - 15.00 m	CORE RUN 11
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 13.50 m to 15.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 17 / 03 / 22
HOLE ID BH114	DEPTH 15.00 m - 16.50 m	CORE RUN 12
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 15.00 m to 16.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH114

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 17 / 03 / 22
HOLE ID BH114	DEPTH 16.50 m - 18.00 m	CORE RUN 13
 GROUND TECHNOLOGY	  	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 16.50 m to 18.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 17 / 03 / 22
HOLE ID BH114	DEPTH 18.00 m - 19.50 m	CORE RUN 14
 GROUND TECHNOLOGY	  	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH114 18.00 m to 19.50 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/03/2022
Location:		Contractor: Sweco	Co-ords: E508916.50 N299596.90
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH115</b>	Hole Type RC	Level 15.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description			
		Depth (m)	Type	Results	TCR	SCR	RQD						
		0.20	ES						(15.20)	Brown and dark grey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone fill and brick.			
		0.40	B										
		0.60	ES										
		1.00	B						1.00 (14.20)	Soft orangish brown and grey clayey silty very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone fill.		1	
		1.50 - 2.00 1.50	B cSPT	N=37 (3,5/5,9,10,13)						1.50 (13.70)		Light brown and brown GRAVEL with high cobble content. Gravel is angular to subrounded fine to coarse limestone. Cobbles are subangular limestone fill and brick.	
		2.50 - 3.00 2.50	B cSPT	N=38 (3,3/5,9,10,14)						2.00 (13.20)		Brown and orangish brown clayey silty sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse limestone fill and brick. Cobbles are subangular limestone.	2
3.50 - 4.00 3.50	B cSPT	N=28 (3,3/5,5,9,9)									3		
4.50 - 4.80 4.50	B cSPT	N=28 (2,3/3,5,9,11)										4	
												5	

Water Added =100 l

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.45 m, the target depth. Once completed the borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/03/2022
Location:		Contractor: Sweco	Co-ords: E508916.50 N299596.90
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH115</b>	Hole Type RC	Level 15.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
█		5.50 - 6.00 5.50	B cSPT	N=20 (2,3/3,5,5,7)					5.50 (9.70)	Brown and orangish brown clayey silty sandy GRAVEL with medium cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse limestone fill and brick. Cobbles are subangular limestone.
		6.90 7.00 - 7.45 7.00	B D SPT	N=13 (2,2/2,3,3,5)					6.90 (8.30)	Light brown and brown slightly clayey slightly silty sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone fill. Cobbles are subangular limestone.
		7.25 - 7.57	CS		100					Firm to stiff dark grey mottled light grey slightly sandy clayey SILT. Sand is fine to coarse.
		8.50 - 8.95 8.50	D SPT	N=14 (1,2/2,2,3,7)	100					
		8.80 - 8.90	D		100				8.70 (6.50) 8.95 (6.25)	Firm to stiff yellowish brown slightly gravelly slightly sandy clayey SILT. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse cemented silt nodules (up to 30 mm x 20 mm) and siltstone (up to 45 mm x 20 mm). Stiff becoming progressively very stiff (after 15.50 m) predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 40 degrees) dark grey with slight greenish/ bluish grey hue slightly gravelly slightly sandy fossiliferous CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (up to 10 mm x 2 mm). Gravel is subrounded to rounded fine to coarse siltstone (up to 70 mm x 30 mm).
	9.50 - 9.95 9.50	D SPT	N=19 (2,3/3,3,5,8)						10	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
9.00	168	7.00 9.00	200 168					7.00 8.00 8.70	8.50 8.70 9.50	Water Water Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.45 m, the target depth. Once completed the borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/03/2022
Location:		Contractor: Sweco	Co-ords: E508916.50 N299596.90
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH115</b>	Hole Type RC	Level 15.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.30 - 10.60	CS		100				11	Stiff becoming progressively very stiff (after 15.50 m) predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 40 degrees) dark grey with slight greenish/ bluish grey hue slightly gravelly slightly sandy fossiliferous CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (up to 10 mm x 2 mm). Gravel is subrounded to rounded fine to coarse siltstone (up to 70 mm x 30 mm).
		11.00 - 11.45 11.00	D SPT	N=27 (3,4/5,6,7,9)					12	11.45 m to 11.50 m very strong light and dark grey fine to medium grained slightly fossiliferous limestone with occasional calcite veins (up to 15 mm x 1 mm)
		11.50 - 11.80	CS		100	3	0		13	
		12.50 - 12.95 12.50	D SPT	N=28 (3,5/5,7,8,8)					14	
		13.30 - 13.60	CS		100				15	
		14.00 - 14.45 14.00	D SPT	N=23 (3,5/5,5,6,7)						
		14.70 - 15.00	CS		100					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.50	11.00	Water		100	100
								11.00	12.50	polymer		100	100
								12.50	14.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.45 m, the target depth. Once completed the borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 22/03/2022
Location:		Contractor: Sweco	Co-ords: E508916.50 N299596.90
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH115</b>	Hole Type RC	Level 15.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.50 - 15.95 15.50	D SPT	N=37 (3,5/7,9,10,11)						Stiff becoming progressively very stiff (after 15.50 m) predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 40 degrees) dark grey with slight greenish/ bluish grey hue slightly gravelly slightly sandy fossiliferous CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (up to 10 mm x 2 mm). Gravel is subrounded to rounded fine to coarse siltstone (up to 70 mm x 30 mm).  15.92 m to 15.95 m shell bed fragment (up to 2 mm x 1 mm)	
		16.10 - 16.28	CS		100						16
		17.00 - 17.45 17.00	D SPT	N=38 (3,5/6,9,11,12)							17
		17.80 - 17.98	CS		100						18
		18.50 - 18.95 18.50	D SPT	N=46 (2,6/9,10,12,15)							19
		19.20 - 19.50	CS		100						20
		20.00 - 20.45	D								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.00	15.50	polymer		100	100
								15.50	17.00	polymer		100	100
								17.00	18.50	polymer		100	100
								18.50	20.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.45 m, the target depth. Once completed the borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).







GROUND TECHNOLOGY  
Victory Park, Attleborough  
Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH115

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>28 / 03 / 22</b>
HOLE ID <b>BH115</b>	DEPTH <b>7.00 m - 8.00 m</b>	CORE RUN <b>01</b>
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH115 7.00 m to 8.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>28 / 03 / 22</b>
HOLE ID <b>BH115</b>	DEPTH <b>8.00 m - 9.50 m</b>	CORE RUN <b>02 - 03</b>
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH115 8.00 m to 9.50 m



GROUND TECHNOLOGY  
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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH115

Project ID: GT0386



BH115 9.50 m to 11.00 m



BH115 11.00 m to 12.50 m





GROUND TECHNOLOGY  
 Victory Park, Attleborough  
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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH115

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 28 / 03 / 22
HOLE ID BH115	DEPTH 12.50 m - 14.00 m	CORE RUN 06

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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 Norfolk | NR17 1ZA  
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 mail@groundtechnology.co.uk  
 www.groundtechnology.co.uk

12.50 m ||

BH115 12.50 m to 14.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 28 / 03 / 22
HOLE ID BH115	DEPTH 14.00 m - 15.50 m	CORE RUN 07

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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 www.groundtechnology.co.uk

14.00 m ||

BH115 14.00 m to 15.50 m



GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH115

Project ID: GT0386



BH115 15.50 m to 17.00 m



BH115 17.00 m to 18.50 m





GROUND TECHNOLOGY  
 Victory Park, Attleborough  
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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
 Supplementary GI

BH115

Project ID: GT0386



BH115 18.50 m to 20.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 10/03/2022
Location:		Contractor: Sweco	Co-ords: E508939.32 N299618.36
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH116</b>	Hole Type RC	Level 13.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.10	ES					(13.09)	Grey and light brown clayey silty very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone fill and brick.	
		0.50 0.50	B ES							
		1.00	B							
		1.50 - 2.00 1.50	B cSPT	N=18 (2,2/3,3,4,8)					1.50 (11.59)	Dark brown and orangish brown clayey silty very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone fill.
		2.50 - 3.00 2.50	B cSPT	N=23 (2,3/3,5,5,10)					2.50 (10.59)	Dark brown and orangish brown clayey sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone fill.
		3.20	B						3.20 (9.89)	Light brown slightly gravel SAND. Sand is fine and medium. Gravel is subangular to subrounded fine limestone.
	Water Added =150 l	3.50 - 4.00 3.50	B cSPT	N=29 (3,3/4,4,8,13)						
		4.50 - 5.00 4.50	B cSPT	N=32 (2,4/4,6,9,13)						

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.00 m, the target depth, however an SPT was carried out at the base of the borehole to 25.62 m bgl. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 6.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel, and with bentonite from 6.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 10/03/2022
Location:		Contractor: Sweco	Co-ords: E508939.32 N299618.36
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH116</b>	Hole Type RC	Level 13.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.50 - 5.80 5.50	B cSPT	N=30 (3,4/4,5,9,12)					5.50 (7.59)	Light brown slightly gravel SAND. Sand is fine and medium. Gravel is subangular to subrounded fine limestone.	
		5.80 - 6.00	B							Dark brown slightly gravelly slightly sandy slightly clayey SILT. Sand is fine. Gravel is subrounded to subangular fine limestone.	
		6.50 - 6.66	CS			100			6.30 (6.79)	Firm light grey occasionally mottled brown SILT with occasional nodules of cemented calcareous silt.	
		7.00 - 7.45 7.00	D SPT	N=9 (1,1/2,2,2,3)							
		8.20 - 8.50	CS			100					
		8.50 - 8.95 8.50	D SPT	N=37 (4,5/8,9,12,8)						8.60 (4.49)	Medium dense to dense light grey mottled dark grey clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse limestone.
		9.88 - 10.00 10.00 - 10.45	CS D							9.70 (3.39)	Stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey fossiliferous CLAY with occasional partings of light grey (25 mm x 1 mm) and occasional nodules of light grey cemented calcareous silt (up to 30 mm x 15 mm).

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
6.00	200	6.00	200					6.00	7.00	Water			
7.50	200	7.50	200					7.00	8.50	Water			
9.00	168	9.00	168					8.50	10.00	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.00 m, the target depth, however an SPT was carried out at the base of the borehole to 25.62 m bgl. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 6.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel, and with bentonite from 6.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 10/03/2022
Location:		Contractor: Sweco	Co-ords: E508939.32 N299618.36
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH116</b>	Hole Type RC	Level 13.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.00	SPT	N=29 (2,3/5,6,7,11)						Stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey fossiliferous CLAY with occasional partings of light grey (25 mm x 1 mm) and occasional nodules of light grey cemented calcareous silt (up to 30 mm x 15 mm).	11
		10.73 - 11.00	CS		80						
		11.20 (1.89)								AZCL	
		11.50 - 11.95 11.50	D SPT	N=22 (2,3/3,5,6,8)						Stiff to very stiff predominantly indistinctly laminated occasionally horizontally laminated (+/- 30 degrees) dark grey silty fossiliferous CLAY with occasional partings of light grey (25 mm x 1 mm) and occasional nodules of light grey cemented calcareous silt (up to 30 mm x 15 mm).	12
		12.70 - 13.00	CS		100						
		13.00 - 13.45 13.00	D SPT	N=40 (3,5/8,9,9,14)							13
	14.20 - 14.50	CS		100						14	
	14.50 - 14.95 14.50	D SPT	N=28 (2,3/5,6,8,9)							15	

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								10.00	11.50	polymer		100	100
								11.50	13.00	polymer		100	100
								13.00	14.50	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.00 m, the target depth, however an SPT was carried out at the base of the borehole to 25.62 m bgl. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 6.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel, and with bentonite from 6.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 10/03/2022
Location:		Contractor: Sweco	Co-ords: E508939.32 N299618.36
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH116</b>	Hole Type RC	Level 13.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.85 - 16.00	CS	N=38 (2,4/6,9,11,12)	100				15.50 m to 15.55 m very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous limestone with calcite veins and occasional inclusions of dark grey rounded siltstone	16	
		16.00 - 16.45 16.00	D SPT								
		16.50 - 16.70	CS		100					16.80 m to 16.88 m very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous limestone with calcite veins and occasional inclusions of dark grey rounded siltstone	17
		17.50 - 17.95 17.50	D SPT	N=44 (3,5/7,11,12,14)	86					18	
		18.74	CS	N=50 (4,6/50 for 228mm)							
		19.00 - 19.60 19.00	D SPT		100				18.80 (-5.71) AZCL	19	
		20.00 - 20.16	CS						19.00 (-5.91) Very stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (+/- 30 degrees) dark grey with slight greenish hue fossiliferous CLAY with occasional partings of light grey (25 mm x 2 mm).	20	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.50	16.00	polymer		100	100
								16.00	17.50	polymer		100	100
								17.50	19.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.00 m, the target depth, however an SPT was carried out at the base of the borehole to 25.62 m bgl. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 6.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel, and with bentonite from 6.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 10/03/2022
Location:		Contractor: Sweco	Co-ords: E508939.32 N299618.36
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH116</b>	Hole Type RC	Level 13.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 5 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		20.50 - 20.60 20.50	D SPT	N=50 (3,6/50 for 227mm)					25.00	Very stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (+/- 30 degrees) dark grey with slight greenish hue fossiliferous CLAY with occasional partings of light grey (25 mm x 2 mm).	
		21.80 - 22.00	CS		100						21
		22.00 - 22.45 22.00	D SPT	50 (5,7/50 for 154mm)							22
		22.50 - 22.70	CS		100						23
		23.50 - 23.91 23.50	D SPT	N=50 (42,6/50 for 261mm)							24
		24.00 - 24.15	CS		100			25			
		25.00 - 25.62	D						25		

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								19.00	20.50	polymer		100	100
								20.50	22.00	polymer		100	100
								22.00	23.50	polymer		100	100
								23.50	25.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.00 m, the target depth, however an SPT was carried out at the base of the borehole to 25.62 m bgl. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 6.00 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel, and with bentonite from 6.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).







GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH116

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 18 / 03 / 22
HOLE ID BH116	DEPTH 6.00 m - 7.00 m	CORE RUN 1
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH116 6.00 m to 7.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 18 / 03 / 22
HOLE ID BH116	DEPTH 7.00 m - 8.50 m	CORE RUN 2
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH116 7.00 m to 8.50 m



GROUND TECHNOLOGY  
 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH116

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH116</b>	DEPTH <b>8.50 m - 10.00 m</b>	CORE RUN <b>3</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Plate</small>	



BH116 8.50 m to 10.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH116</b>	DEPTH <b>10.00 m - 11.50 m</b>	CORE RUN <b>4</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Plate</small>	



BH116 10.00 m to 11.50 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH116

Project ID: GT0386



BH116 11.50 m to 13.00 m



BH116 13.00 m to 14.50 m





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 Victory Park, Attleborough  
 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH116

Project ID: GT0386



BH116 14.50 m to 16.00 m



BH116 16.00 m to 17.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH116

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 21 / 03 / 22
HOLE ID BH116	DEPTH 17.50 m - 19.00 m	CORE RUN 9
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH116 17.50 m to 19.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 21 / 03 / 22
HOLE ID BH116	DEPTH 19.00 m - 20.50 m	CORE RUN 10
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH116 19.00 m to 20.50 m





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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH116

Project ID: GT0386



BH116 20.50 m to 22.00 m



BH116 22.00 m to 23.50 m





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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH116

Project ID: GT0386



BH116 23.50 m to 25.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 07/03/2022
Location:		Contractor: Sweco	Co-ords: E508970.99 N299639.67
Project No. : GT0386		Crew Name: AE / LW+DB / MC	Drilling Equipment: Fraste   Dando 3000

Borehole Number <b>BH117</b>	Hole Type RC	Level 20.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 7
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
Water Added = 150 l		0.10 - 0.20	ES					(20.20)	Soft light yellowish brown dark brown and grey sandy gravelly CLAY with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium flint and limestone fill.	
		0.50 0.50 - 0.60	B ES							
		1.00	B					1.00 (19.20)	Yellowish brown clayey silty very gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded fine limestone fill.	
		1.50 - 2.00 1.50	B cSPT	50 (8,17/50 for 150mm)						
		2.50 - 3.00 2.50	B cSPT	50 (19,6/50 for 90mm)						
		3.50 - 4.00 3.50	B cSPT	50 (3,19/50 for 135mm)						
	4.50 - 5.00 4.50	B cSPT	50 (22,3/50 for 100mm)						1.00 m to 6.00 m recovered as clay containing limestone fragments to cable drilling with addition of water has crushed and 'pulped' the fill material into clay	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was scheduled to be drilled to 25.00 m, however under the instruction of Sweco the borehole was terminated at 30.60 m. The borehole was installed from ground level to 7.00 m bgl with plain pipe and from 7.00 m bgl to 9.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 7.00 m bgl with bentonite, from 7.00 m bgl to 9.00 m bgl with gravel, and with bentonite from 9.00 m bgl to the base of the borehole. The borehole was finished with a flush cover cemented into place. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 07/03/2022
Location:		Contractor: Sweco	Co-ords: E508970.99 N299639.67
Project No. : GT0386		Crew Name: AE / LW+DB / MC	Drilling Equipment: Fraste   Dando 3000

Borehole Number <b>BH117</b>	Hole Type RC	Level 20.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 7
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.50 - 6.00 5.50	B cSPT	50 (23,2/50 for 90mm)					6.00 (14.20)	Yellowish brown clayey silty very gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded fine limestone fill.
		7.00 - 7.10	D		100				7.50 (12.70)	Medium dense becoming dense light yellowish brown slightly silty gravelly SAND with occasional black roots lignitic roots (up to 35 mm x 5 mm). Sand is fine to coarse. Gravel is fine to coarse cemented sand in silt matrix with dark reddish brown partings (up to 40 mm x 1 mm).
		7.50 - 7.95 7.50	D SPT	N=49 (2,3/8,12,13,16)					7.80 (12.40)	Dense light yellowish brown SAND with occasional pockets of black decomposed organic material (up to 10 mm x 5 mm). Sand is fine and medium. No recovery.
		7.70 - 7.80	D		20				9.00 (11.20)	
		9.00 - 9.45 9.00	D SPT	N=37 (3,5/7,9,9,12)					9.50 (10.70)	Dense light yellowish brown SAND. Sand is fine and medium. Dense black silty SAND in a lignitic matrix. Sand is fine to coarse.
		9.50 - 9.60	D		66				9.80 (10.40)	
		9.90 - 10.00	D						10.00	Stiff light grey mottled dark grey sandy SILT with occasional partings of lignitic silt (up to 30 mm x 1 mm). Sand is fine.

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
6.00	200	6.00	200					6.00	7.50	polymer		100	100
7.00	168	7.00	168					7.50	9.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was scheduled to be drilled to 25.00 m, however under the instruction of Sweco the borehole was terminated at 30.60 m. The borehole was installed from ground level to 7.00 m bgl with plain pipe and from 7.00 m bgl to 9.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 7.00 m bgl with bentonite, from 7.00 m bgl to 9.00 m bgl with gravel, and with bentonite from 9.00 m bgl to the base of the borehole. The borehole was finished with a flush cover cemented into place. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 07/03/2022
Location:		Contractor: Sweco	Co-ords: E508970.99 N299639.67
Project No. : GT0386		Crew Name: AE / LW+DB / MC	Drilling Equipment: Fraste   Dando 3000

Borehole Number <b>BH117</b>	Hole Type RC	Level 20.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 7
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
									(10.20)	AZCL	
		10.50 - 10.95 10.50	D SPT	N=31 (2,3/6,8,8,9)					10.50 (9.70)	Stiff light grey mottled dark grey sandy SILT with occasional partings of lignitic silt (up to 30 mm x 1 mm). Sand is fine.	11
		11.20 - 11.30	D		80				11.10 (9.10)	Very stiff dark grey locally tending to stiff indistinctly laminated CLAY with frequent partings of light grey silt and occasional pockets of light grey fine sand (up to 25 mm x 10 mm).	
		11.60 - 11.70	D						11.40 (8.80)	Stiff light grey mottled dark grey and greenish grey sandy SILT with occasional partings of lignitic silt (up to 30 mm x 1 mm). Sand is fine.	
		12.00 - 12.45 12.00	D SPT	N=24 (3,3/4,5,7,8)					11.70 (8.50)	AZCL	
		12.60 - 12.70	D		0				12.00 (8.20)	Stiff light greenish grey occasionally mottled dark grey slightly gravelly slightly sandy silty CLAY with occasional pockets of lignitic silt and light grey silt (up to 20 mm x 10 mm). Sand is fine. Gravel is subrounded fine limestone.	12
		13.00 - 13.35	CS								13
		13.50 - 13.67 13.50 - 13.80 13.50	CS D SPT	100 (1,16/100 for 76mm)					13.50 (6.70)	Very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous LIMESTONE with inclusions of dark rounded clasts of siltstone (up to 40 mm x 20 mm) and occasional calcite veins (up to 15 mm x 1 mm), (slightly weathered grade II)	
		14.40 - 14.62	CS		100	10	10		13.80 (6.40)	Very stiff predominantly thinly laminated dark grey to occasionally greenish grey slightly fossiliferous CLAY with occasional light grey slightly calcareous silt partings and shell fragments (up to 5 mm).	14
		15.00 - 15.45	D								15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
13.50	168	13.50	168					9.00	10.50	polymer		100	100
								10.50	12.00	polymer		100	100
								12.00	13.00	polymer		100	100
								13.00	13.50	polymer		100	100
								13.50	15.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was scheduled to be drilled to 25.00 m, however under the instruction of Sweco the borehole was terminated at 30.60 m. The borehole was installed from ground level to 7.00 m bgl with plain pipe and from 7.00 m bgl to 9.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 7.00 m bgl with bentonite, from 7.00 m bgl to 9.00 m bgl with gravel, and with bentonite from 9.00 m bgl to the base of the borehole. The borehole was finished with a flush cover cemented into place. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 07/03/2022
Location:		Contractor: Sweco	Co-ords: E508970.99 N299639.67
Project No. : GT0386		Crew Name: AE / LW+DB / MC	Drilling Equipment: Fraste   Dando 3000

Borehole Number <b>BH117</b>	Hole Type RC	Level 20.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 7
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.00	SPT	N=47 (3,4/5,7,16,19)						Very stiff predominantly thinly laminated dark grey to occasionally greenish grey slightly fossiliferous CLAY with occasional light grey slightly calcareous silt partings and shell fragments (up to 5 mm).
		15.50 - 15.80	CS		100	5	0			15.45 m to 15.50 m very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous limestone
		16.50 - 16.95 16.50	D SPT	N=39 (4,6/7,8,11,13)						
		17.00 - 17.26	CS		100					
		18.00 - 18.45 18.00	D SPT	N=30 (3,4/6,7,8,9)						
		18.50 - 18.70	CS		100			18.35 m to 18.40 m recovered as rounded fine to coarse fine to medium grained fossiliferous limestone gravels		
		19.50 - 19.95 19.50	D SPT	N=45 (4,6/7,8,12,18)						

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								15.00	16.50	polymer		100	100
								16.50	18.00	polymer		100	100
								18.00	19.50	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was scheduled to be drilled to 25.00 m, however under the instruction of Sweco the borehole was terminated at 30.60 m. The borehole was installed from ground level to 7.00 m bgl with plain pipe and from 7.00 m bgl to 9.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 7.00 m bgl with bentonite, from 7.00 m bgl to 9.00 m bgl with gravel, and with bentonite from 9.00 m bgl to the base of the borehole. The borehole was finished with a flush cover cemented into place. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 07/03/2022
Location:		Contractor: Sweco	Co-ords: E508970.99 N299639.67
Project No. : GT0386		Crew Name: AE / LW+DB / MC	Drilling Equipment: Fraste   Dando 3000

Borehole Number <b>BH117</b>	Hole Type RC	Level 20.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 5 of 7
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		20.15 - 20.30	CS						20.60 (-0.40)	AZCL	
		21.00 - 21.45 21.00	D SPT	N=42 (3,6/7,9,11,15)	73				21.00 (-0.80)	Very stiff predominantly thinly laminated dark grey slightly fossiliferous CLAY with occasional light grey slightly calcareous silt partings and shell fragments (up to 5 mm).	21
		21.80 - 22.00	CS		100						22
		22.50 - 23.10 22.50	D SPT	N=50 (4,6/50 for 228mm)							23
		23.80 - 24.00	CS								
		24.00 - 24.58 24.00	D SPT	50 (4,7/50 for 208mm)							24
		24.60 - 24.80	CS		100						25

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								19.50	21.00	polymer		100	100
								21.00	22.50	polymer		100	100
								22.50	24.00	polymer		100	100
								24.00	25.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was scheduled to be drilled to 25.00 m, however under the instruction of Sweco the borehole was terminated at 30.60 m. The borehole was installed from ground level to 7.00 m bgl with plain pipe and from 7.00 m bgl to 9.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 7.00 m bgl with bentonite, from 7.00 m bgl to 9.00 m bgl with gravel, and with bentonite from 9.00 m bgl to the base of the borehole. The borehole was finished with a flush cover cemented into place. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 07/03/2022
Location:		Contractor: Sweco	Co-ords: E508970.99 N299639.67
Project No. : GT0386		Crew Name: AE / LW+DB / MC	Drilling Equipment: Fraste   Dando 3000

Borehole Number <b>BH117</b>	Hole Type RC	Level 20.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 6 of 7
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		25.50 - 25.95 25.50	D SPT	N=45 (4,5/7,9,12,17)	100				26.50 (-6.30)	AZCL	26
		26.00 - 26.15	CS		66						
		27.00 - 27.60 27.00	D SPT	50 (5,7/50 for 221mm)					27.00 (-6.80)	Very stiff predominantly thinly laminated dark grey slightly fossiliferous CLAY with occasional light grey slightly calcareous cemented silt nodules (up to 10 mm x 10 mm) silt partings (up to 30 mm x 1 mm) and shell fragments (up to 3 mm x 5 mm). 3no complete bi-valves (up to 20 mm x 10 mm)	27
		27.70 - 27.85	CS		100						
		28.50 - 28.95 28.50	D SPT	50 (3,7/50 for 151mm)							
		29.10 - 29.33	CS		100						28
		30.00 - 30.60	D								29
										30	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								25.00	25.50	Water		100	100
								25.50	27.00	Water		100	100
								27.00	28.50	Water		100	100
								28.50	30.00	Water		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was scheduled to be drilled to 25.00 m, however under the instruction of Sweco the borehole was terminated at 30.60 m. The borehole was installed from ground level to 7.00 m bgl with plain pipe and from 7.00 m bgl to 9.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 7.00 m bgl with bentonite, from 7.00 m bgl to 9.00 m bgl with gravel, and with bentonite from 9.00 m bgl to the base of the borehole. The borehole was finished with a flush cover cemented into place. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
 Supplementary GI

BH117

Project ID: GT0386



BH117 6.00 m to 7.50 m



BH117 7.50 m to 9.00 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH117

Project ID: GT0386



BH117 9.00 m to 10.50 m



BH117 10.50 m to 12.00 m



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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH117

Project ID: GT0386



BH117 12.00 m to 13.50 m



BH117 13.50 m to 15.00 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH117

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 15 / 03 / 22
HOLE ID BH117	DEPTH 15.00 - 16.50 m	CORE RUN 08
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH117 15.00 m to 16.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 15 / 03 / 22
HOLE ID BH117	DEPTH 16.50 - 18.00 m	CORE RUN 09
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH117 16.50 m to 18.00 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

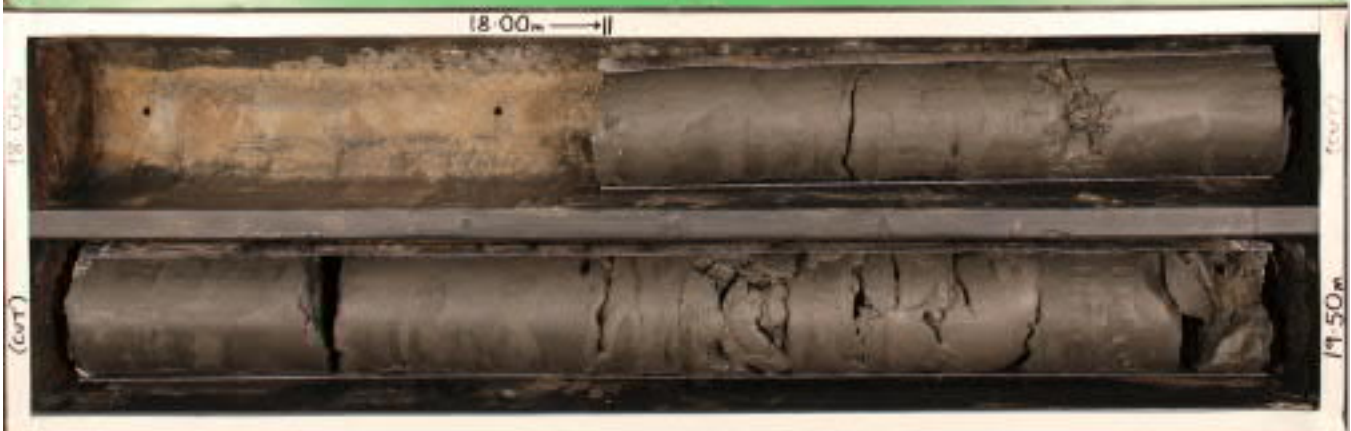
# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH117

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 15 / 03 / 22
HOLE ID BH117	DEPTH 18.00 m - 19.50 m	CORE RUN 10
	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH117 18.00 m to 19.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 15 / 03 / 22
HOLE ID BH117	DEPTH 19.50 m - 21.00 m	CORE RUN 11
	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH117 19.50 m to 21.00 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
 Supplementary GI

BH117

Project ID: GT0386



BH117 21.00 m to 22.50 m



BH117 22.50 m to 24.00 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH117

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 15 / 03 / 22
HOLE ID BH117	DEPTH 24.00 m - 25.50 m	CORE RUN 14 - 15
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH117 24.00 m to 25.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 15 / 03 / 22
HOLE ID BH117	DEPTH 25.50 m - 27.00 m	CORE RUN 16
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH117 25.50 m to 27.00 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH117

Project ID: GT0386



BH117 27.00 m to 28.50 m



BH117 28.50 m to 30.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/03/2022
Location:		Contractor: Sweco	Co-ords: E508940.35 N299592.82
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH118</b>	Hole Type RC	Level 14.48m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
Water Added = 100 l		0.20	B					(14.48)	Dark grey slightly clayey slightly sandy GRAVEL with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint, limestone fill and wood.	
		0.50	ES					0.50 (13.98)	Medium dense becoming dense brown clayey silty very gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone fill.	
		1.00 1.00	B ES							
		1.50 - 2.00 1.50	B cSPT	N=25 (2,4/4,4,5,12)						
		2.50 - 3.00 2.50	B cSPT	N=38 (3,5/5,9,10,14)				2.50 (11.98)	Brown clayey silty very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone fill.	
	3.50 - 4.00 3.50	B cSPT	N=16 (2,3/3,3,5,5)				3.50 (10.98)	Medium dense to dense brown clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine limestone fill.		
	4.50 - 5.00 4.50	B cSPT	N=22 (2,4/4,5,6,7)				4.50 (9.98)	Medium dense light brown clayey SAND. Sand is fine and medium.		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.60 m, the target depth. Once completed the borehole was backfilled with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/03/2022
Location:		Contractor: Sweco	Co-ords: E508940.35 N299592.82
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH118</b>	Hole Type RC	Level 14.48m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
[Redacted]		5.50 - 6.00 5.50	B cSPT	N=24 (2,4/5,5,6,8)				[Pattern]	6.10 (8.38)	Medium dense light brown clayey SAND. Sand is fine and medium.
		6.10	B					[Pattern]	7.00 - 7.45 7.00	Stiff light grey mottled orangish brown to dark grey mottled orangish brown slightly sandy very clayey SILT. Sand is fine.
		7.00 - 7.45 7.00	D SPT	N=25 (3,5/5,6,7,7)				[Pattern]	7.82 (6.66)	
		7.60 - 7.70	D		80			[Pattern]	8.20 (6.28)	Stiff alternating light grey and dark grey thinly to thickly laminated slightly gravelly SILT with occasional pockets of black lignitic organic material (up to 30 mm x 15 mm). Sand is fine. Gravel is subangular to subrounded fine to coarse siltstone (up to 40 mm x 20 mm). AZCL
		8.50 - 8.95 8.50	D SPT	N=9 (2,2/2,2,2,3)				[Pattern]	8.50 (5.98)	Firm becoming stiff light grey occasionally dark grey slightly sandy CLAY/SILT with occasional vertical black lignitic organic material (possible roots) (up to 20 mm x 2 mm). Sand is fine.
		9.57 - 9.80	CS		86			[Pattern]	9.80 (4.68)	AZCL
		10.00 - 10.45	D				[Pattern]	10.00		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
7.50	200	7.50	200					7.00	8.50	Water		100	100
9.20	168	9.20	168					8.50	10.00	Water			

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.60 m, the target depth. Once completed the borehole was backfilled with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/03/2022
Location:		Contractor: Sweco	Co-ords: E508940.35 N299592.82
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH118</b>	Hole Type RC	Level 14.48m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.00	SPT	N=17 (1,2/2,3,5,7)					(4.48)	Stiff predominantly dark grey slightly sandy CLAY with occasional vertical black lignitic organic material (possible roots) (up to 20 mm x 2 mm). Sand is fine.	
		10.60 - 10.80	CS		100	28	14		10.60 (3.88)	Very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous LIMESTONE with inclusions of dark rounded clasts of siltstone (up to 40 mm x 20 mm) and occasional calcite veins (up to 15 mm x 1 mm). (Slightly weathered Grade II).	11
		11.50 - 11.95	D SPT	N=25 (3,4/5,6,7,7)					11.00 (3.48)	Stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 30 degrees) dark grey with slight greenish grey hue slightly gravelly fossiliferous CLAY with nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (10 mm x 2 mm). Gravel is subrounded to rounded fine to coarse siltstone (up to 40 mm x 20 mm).	
		11.50			100						
		12.80 - 13.00	CS		100				12.40 (2.08)	Very stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 30 degrees) dark grey with slight greenish grey hue fossiliferous slightly sandy very silty CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (10 mm x 2 mm).	12
		13.00 - 13.45	D SPT	N=31 (3,5/6,7,8,10)							
		13.00			100						
		14.20 - 14.50	CS								
	14.50 - 14.95	D SPT	N=33 (3,5/7,7,8,11)								
	14.50										

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								10.00	11.50	Water		100	100
								11.50	12.20	Water		100	100
								12.20	13.00	polymer		100	100
								13.00	14.50	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.60 m, the target depth. Once completed the borehole was backfilled with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/03/2022
Location:		Contractor: Sweco	Co-ords: E508940.35 N299592.82
Project No. : GT0386		Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH118</b>	Hole Type RC	Level 14.48m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.80 - 16.00	CS	N=48 (3,6/6,10,14,18)	100				17.60 (-3.12)	Very stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 30 degrees) dark grey with slight greenish grey hue fossiliferous slightly sandy very silty CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (10 mm x 2 mm).
		16.00 - 16.45 16.00	D SPT							
		16.50 - 16.80	CS	100						
		17.50 - 17.95 17.50	D SPT	N=22 (2,4/4,4,6,8)						
		18.70 - 19.00	CS	N=43 (5,6/7,8,12,16)	100				Stiff becoming very stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 30 degrees) dark grey with slight greenish grey hue slightly gravelly fossiliferous CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (10 mm x 2 mm). Gravel is subrounded to rounded fine to coarse siltstone (up to 70 mm x 20 mm) <i>17.90 m to 18.10 m very strong to extremely strong light and dark grey fine to medium grained slightly fossiliferous limestone with inclusions of dark rounded clasts of siltstone</i>	
		19.00 - 19.45 19.00	D SPT		100					

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.50	16.00	polymer		100	100
								16.00	17.50	polymer		100	100
								17.50	19.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.60 m, the target depth. Once completed the borehole was backfilled with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 14/02/2022 - 16/03/2022
Location:	Contractor: Sweco	Co-ords: E508940.35 N299592.82
Project No. : GT0386	Crew Name: DB / MC+AE / LW	Drilling Equipment: Dando 3000   Fraste

Borehole Number <b>BH118</b>	Hole Type RC	Level 14.48m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 5 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		20.35 - 20.50	CS	N=49 (3,6/7,11,14,17)	100					Stiff becoming very stiff predominantly indistinctly laminated occasionally horizontally thinly laminated (up to +/- 30 degrees) dark grey with slight greenish grey hue slightly gravelly fossiliferous CLAY with occasional nodules of light grey cemented calcareous silt (up to 45 mm x 20 mm) and occasional partings of light grey calcareous silt (10 mm x 2 mm). Gravel is subrounded to rounded fine to coarse siltstone (up to 70 mm x 20 mm)	
		20.50 - 20.95 20.50	D SPT								
		21.86 - 22.00	CS	50 (4,7/50 for 163mm)	100						22
		22.00 - 22.54 22.00	D SPT								
		23.33 - 23.50	CS	N=50 (4,7/50 for 284mm)	100						24
	23.50 - 24.16 23.50	D SPT								25	
		24.00 - 24.10	CS		100						
		25.00 - 25.60	D								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								19.00	20.50	polymer		100	100
								20.50	22.00	polymer		100	100
								22.00	25.00	polymer		100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.60 m, the target depth. Once completed the borehole was backfilled with bentonite. SPT Hammer Ref: P2011130 (R9) (Fraste) & 12-4 (Dando 3000).







GROUND TECHNOLOGY  
Victory Park, Attleborough  
Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH118

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>23 / 03 / 22</b>
HOLE ID <b>BH118</b>	DEPTH <b>7.00 - 8.50</b>	CORE RUN <b>1</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH118 7.00 m to 8.50 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>23 / 03 / 22</b>
HOLE ID <b>BH118</b>	DEPTH <b>8.50 m - 10.00 m</b>	CORE RUN <b>2</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH118 8.50 m to 10.00 m



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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH118

Project ID: GT0386



BH118 10.00 m to 11.50 m



BH118 11.50 m to 13.00 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH118

Project ID: GT0386



BH118 13.00 m to 14.50 m



BH118 14.50 m to 16.00 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH118

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 24 / 03 / 22
HOLE ID BH 118	DEPTH 16.00 - 17.50 m	CORE RUN 8
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH118 16.00 m to 17.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 24 / 03 / 22
HOLE ID BH 118	DEPTH 17.50 - 19.00 m	CORE RUN 9
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH118 17.50 m to 19.00 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH118

Project ID: GT0386

PROJECT NO: GT0386	PROJECT NAME: A47 WANSFORD to SUTTON	DATE: 24 / 03 / 22
HOLE ID: BH 118	DEPTH: 19.00 m - 20.50 m	CORE RUN: 10
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Color Control Patches	



BH118 19.00 m to 20.50 m

PROJECT NO: GT0386	PROJECT NAME: A47 WANSFORD to SUTTON	DATE: 24 / 03 / 22
HOLE ID: BH 118	DEPTH: 20.50 m - 22.00 m	CORE RUN: 11
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Color Control Patches	



BH118 20.50 m to 22.00 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH118

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 03 / 22</b>
HOLE ID <b>BH 118</b>	DEPTH <b>22.00 m - 23.50 m</b>	CORE RUN <b>12</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Patches</small>	



BH118 22.00 m to 23.50 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 03 / 22</b>
HOLE ID <b>BH 118</b>	DEPTH <b>23.50 m - 25.00 m</b>	CORE RUN <b>13 (EOBH)</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Patches</small>	



BH118 23.50 m to 25.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/03/2022 - 18/03/2022
Location:		Contractor: Sweco	Co-ords: E508480.34 N299714.13
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH119</b>	Hole Type RC	Level 17.40m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.10 - 0.20	ES	PID = 0 ppm					(17.40)	Dark brown silty slightly gravelly CLAY. Gravel is subangular and subrounded fine and medium flint.
		0.50 - 0.60 0.50	ES PID						0.50 (16.90)	Very soft brown silty slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse flint.
		1.20 - 2.20 1.20 1.30 - 1.60	C SPT D	N=22 (4,4/4,6,6,6)					1.20 (16.20)	Brown slightly calcareous clayey silty very gravelly SAND. Sand is fine to coarse. Gravel is angular to rounded fine and medium chert.
		1.70 - 1.80	D		100				1.90 (15.50)	1.65 m to 1.80 m gravelly 1.80 m to 1.90 m orangish brown, very sandy
		2.00 - 3.00 2.20 - 3.20 2.20	B C SPT	N=24 (8,4/3,5,5,11)	100					Medium dense orangish brown slightly calcareous slightly sand GRAVEL with closely to medium spaced thin to medium beds of CLAY. Sand is fine to coarse. Gravel is angular to rounded fine and medium chert and limestone. Clay beds are firm slightly calcareous brown and grey slightly sandy slightly gravelly, sometimes laminated with partings of silt.
		3.20 - 4.20 3.20 - 4.20 3.20	B C SPT	N=28 (4,4/4,6,10,8)	100					
		4.20 - 5.20 4.20	C SPT	N=38 (4,6/6,9,11,12)					(13.20)	
		4.50 - 4.80	D		85				4.35	4.40 m to 4.75 m grey gravelly clay No recovery.
		4.90 - 5.20	CS						4.80 (12.60)	Firm grey CLAY with light grey and brown partings and root traces.

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	yellow	100	100
								2.20	3.20	Air/Mist	yellow	100	100
								3.20	4.20	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 26.00 m, slightly below the target depth to complete the core run. The borehole was instilled from ground level to 12.00 m bgl with plain pipe and from 12.00 m bgl to 16.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 12.00 m bgl with bentonite, from 12.00 m bgl to 16.00 m bgl with gravel, and with bentonite from 16.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/03/2022 - 18/03/2022
Location:		Contractor: Sweco	Co-ords: E508480.34 N299714.13
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH119</b>	Hole Type RC	Level 17.40m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.20 - 6.20	C						5.10 (12.30)	Firm grey CLAY with light grey and brown partings and root traces.
		5.80 - 6.10	CS		100					Firm to stiff locally laminated (5-10 degrees) grey CLAY with frequent ordered lithorelics (<20 mm). Frequently crumbly texture/fabric. (Destructured Grade D).
		6.20 - 7.20	C							5.20 m to 5.40 m significantly softened and disturbed, with gravel probably brought down from overlying strata by drilling
		6.40 - 6.70	CS		100					
		8.20 - 9.00	C							6.70 m to 6.80 m slightly yellowish brown mottled
		9.00 - 10.50	C		45					
					100					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.20	5.20	Air/Mist	yellow	100	100
								5.20	6.20	Air/Mist	grey	100	100
								6.20	7.20	Air/Mist	grey	100	100
								8.20	9.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 26.00 m, slightly below the target depth to complete the core run. The borehole was instilled from ground level to 12.00 m bgl with plain pipe and from 12.00 m bgl to 16.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 12.00 m bgl with bentonite, from 12.00 m bgl to 16.00 m bgl with gravel, and with bentonite from 16.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/03/2022 - 18/03/2022
Location:		Contractor: Sweco	Co-ords: E508480.34 N299714.13
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH119</b>	Hole Type RC	Level 17.40m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.50 - 12.00	C						Firm to stiff locally laminated (5-10 degrees) grey CLAY with frequent ordered lithorelics (<20 mm). Frequently crumbly texture/fabric. (Destructured Grade D).	
		12.00 - 13.50	C							
		13.50 - 15.00	C							
		15.00 - 16.50	C							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		12.00	121					9.00	10.50	Air/Mist	grey	100	100
								10.50	12.00	Air/Mist	grey	100	100
								12.00	13.50	Air/Mist	grey	100	100
								13.50	15.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 26.00 m, slightly below the target depth to complete the core run. The borehole was instilled from ground level to 12.00 m bgl with plain pipe and from 12.00 m bgl to 16.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 12.00 m bgl with bentonite, from 12.00 m bgl to 16.00 m bgl with gravel, and with bentonite from 16.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/03/2022 - 18/03/2022
Location:		Contractor: Sweco	Co-ords: E508480.34 N299714.13
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH119</b>	Hole Type RC	Level 17.40m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
					100					Firm to stiff locally laminated (5-10 degrees) grey CLAY with frequent ordered lithorelics (<20 mm). Frequently crumbly texture/fabric. (Destructured Grade D).
	16.50 - 17.00	C		100						
	17.00 - 18.50	C		100						
	18.50 - 20.00	C		95						
	20.00 - 21.50	C								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								15.00	16.50	Air/Mist	grey	100	100
								16.50	17.00	Air/Mist	grey	100	100
								17.00	18.50	Air/Mist	grey	100	100
								18.50	20.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 26.00 m, slightly below the target depth to complete the core run. The borehole was insilled from ground level to 12.00 m bgl with plain pipe and from 12.00 m bgl to 16.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 12.00 m bgl with bentonite, from 12.00 m bgl to 16.00 m bgl with gravel, and with bentonite from 16.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/03/2022 - 18/03/2022
Location:		Contractor: Sweco	Co-ords: E508480.34 N299714.13
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH119</b>	Hole Type RC	Level 17.40m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 5 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		21.50 - 23.00	C		100					Firm to stiff locally laminated (5-10 degrees) grey CLAY with frequent ordered lithorelics (<20 mm). Frequently crumbly texture/fabric. (Destructured Grade D).
		23.00 - 24.50	C		100					
		24.50 - 26.00	C		75					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
23.00	121							20.00	21.50	Air/Mist	grey	100	100
								21.50	23.00	Air/Mist	grey	100	100
								23.00	24.50		grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 26.00 m, slightly below the target depth to complete the core run. The borehole was instilled from ground level to 12.00 m bgl with plain pipe and from 12.00 m bgl to 16.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 12.00 m bgl with bentonite, from 12.00 m bgl to 16.00 m bgl with gravel, and with bentonite from 16.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/03/2022 - 18/03/2022
Location:		Contractor: Sweco	Co-ords: E508480.34 N299714.13
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH119</b>	Hole Type RC	Level 17.40m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 6 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
					100				26.00	Firm to stiff locally laminated (5-10 degrees) grey CLAY with frequent ordered lithorelics (<20 mm). Frequently crumbly texture/fabric. (Destructured Grade D).	26
										End of Borehole at 26.00m	27
											28
											29
											30

Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								24.50	26.00		grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 26.00 m, slightly below the target depth to complete the core run. The borehole was instilled from ground level to 12.00 m bgl with plain pipe and from 12.00 m bgl to 16.00 m bgl with slotted pipe. The borehole was backfilled from ground level to 12.00 m bgl with bentonite, from 12.00 m bgl to 16.00 m bgl with gravel, and with bentonite from 16.00 m bgl to the base of the borehole. The install was finished with a tophat cover secured into place with concrete. SPT Hammer Ref: SIS1.



GROUND TECHNOLOGY  
Victory Park, Attleborough  
Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH119

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH119</b>	DEPTH <b>1.20 m - 3.20 m</b>	CORE RUN <b>01 - 02</b>
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Chart	



BH119 1.20 m to 3.20 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH119</b>	DEPTH <b>3.20 m - 5.20 m</b>	CORE RUN <b>03 - 04</b>
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Chart	



BH119 3.20 m to 5.20 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH119

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH119</b>	DEPTH <b>5.20 m - 7.20 m</b>	CORE RUN <b>05 - 06</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH119 5.20 m to 7.20 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH119</b>	DEPTH <b>7.20 m - 9.00 m</b>	CORE RUN <b>07 - 08</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH119 7.20 m to 9.00 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH119

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 18 / 03 / 22
HOLE ID BH119	DEPTH 9.00 m - 10.50 m	CORE RUN 09
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH119 9.00 m to 10.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 18 / 03 / 22
HOLE ID BH119	DEPTH 10.50 m - 12.00 m	CORE RUN 10
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH119 10.50 m to 12.00 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH119

Project ID: GT0386

PROJECT NO: GT0386	PROJECT NAME: A47 WANSFORD to SUTTON	DATE: 18 / 03 / 22
HOLE ID: BH119	DEPTH: 12.00 m - 13.50 m	CORE RUN: 11

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH119 12.00 m to 13.50 m

PROJECT NO: GT0386	PROJECT NAME: A47 WANSFORD to SUTTON	DATE: 18 / 03 / 22
HOLE ID: BH119	DEPTH: 13.50 m - 15.00 m	CORE RUN: 12

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH119 13.50 m to 15.00 m





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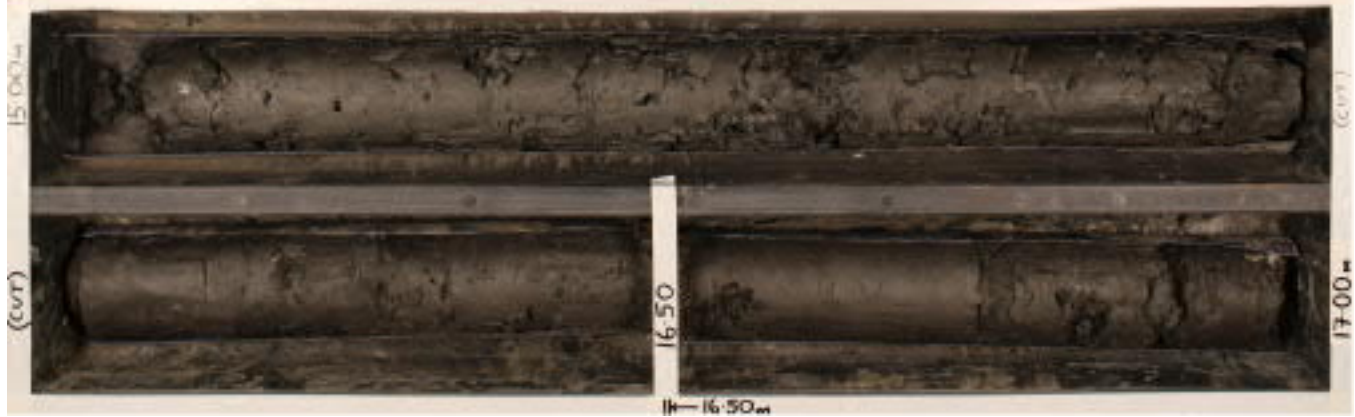
# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH119

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH119</b>	DEPTH <b>15.00 m - 17.00 m</b>	CORE RUN <b>13 - 14</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH119 15.00 m to 17.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 03 / 22</b>
HOLE ID <b>BH119</b>	DEPTH <b>17.00 m - 18.50 m</b>	CORE RUN <b>15</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH119 17.00 m to 18.50 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH119

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 22 / 03 / 22
HOLE ID BH119	DEPTH 18.50 m - 20.00 m	CORE RUN 16
 GROUND TECHNOLOGY	Grey Scale 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	Colour Control Patches 	



BH119 18.50 m to 20.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 22 / 03 / 22
HOLE ID BH119	DEPTH 20.00 m - 21.50 m	CORE RUN 17
 GROUND TECHNOLOGY	Grey Scale 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	Colour Control Patches 	



BH119 20.00 m to 21.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH119

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 22 / 03 / 22
HOLE ID BH119	DEPTH 21.50 m - 23.00 m	CORE RUN 18
	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH119 21.50 m to 23.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 22 / 03 / 22
HOLE ID BH119	DEPTH 23.00 m - 24.50 m	CORE RUN 19
	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH119 23.00 m to 24.50 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH119

Project ID: GT0386



BH119 24.50 m to 26.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/03/2022 - 08/03/2022
Location:		Contractor: Sweco	Co-ords: E508943.03 N299531.69
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH120 &amp; BH120A</b>	Hole Type RC	Level 13.47m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description		
		Depth (m)	Type	Results	TCR	SCR	RQD					
No Water Strikes		0.00 - 0.30	B						(13.47)	Dark brown clayey gravelly SAND with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint.		
		0.10	ES									
		0.20 - 0.30	D									
			0.30 - 0.70	B								
			0.50	B					0.50	Brown and yellowish brown clayey silty very gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint.		
			0.50	ES					(12.97)			
			0.60 - 0.70	D								
			1.10	B					1.10	Light brown slightly clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded fine to coarse flint and limestone. Cobbles are subrounded limestone.		
			1.20	ES	N=24 (3,4/7,6,5,6)				(12.37)			
			1.20	SPT								
			1.40 - 1.50	D					1.50	Light yellowish brown and grey slightly clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint and limestone. Cobbles are subrounded limestone.		
			1.50 - 2.00	B		100			(11.97)			
			2.00	SPT	N=26 (3,5/6,6,7,7)							
			2.50 - 2.60	D		70						No recovery.
			2.50 - 3.00	B					2.70	(10.77)		
		3.00	SPT	N=24 (3,4/6,5,7,6)				3.00	Light brown and grey slightly clayey slightly sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint, limestone, sandstone and mudstone. Cobbles are subangular limestone.			
		3.20 - 3.30	D					(10.47)				
		3.50 - 4.00	B		60			3.60		(9.87)		
										No recovery.		
		4.00	SPT	N=14 (2,3/3,4,3,4)				4.00	Brown and grey slightly clayey very sandy GRAVEL with pockets of dark grey silt (< 50 mm). Sand is fine to coarse. Gravel is subangular to rounded fine and medium flint and limestone.			
		4.50 - 4.60	D					(9.47)				
		4.50 - 5.00	B		100							
		4.90 - 5.00	D									

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was originally advanced from ground level using rotary techniques, however the borehole was terminated at 5.00 m bgl due to the casing becoming jammed. The borehole was repositioned and was terminated at 15.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/03/2022 - 08/03/2022
Location:		Contractor: Sweco	Co-ords: E508943.03 N299531.69
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH120 &amp; BH120A</b>	Hole Type RC	Level 13.47m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.50 - 5.70	B		0					Brown and grey slightly clayey very sandy GRAVEL with pockets of dark grey silt (< 50 mm). Sand is fine to coarse. Gravel is subangular to rounded fine and medium flint and limestone. 5.00 m bgl - BH120 terminated due to jammed casing - continued as BH120A.	
		5.70 - 6.00	B						5.70 (7.77)	Stiff dark grey mottled light grey slightly sandy clayey SILT. Sand is fine.	
		6.00 - 6.41 6.00 - 7.00	D C						6.00 (7.47)	Medium dense light brown and orangish brown silty SAND. Sand is fine and medium.	6
		7.00	SPT	N=15 (1,1/2,4,4,5)					6.60 (6.87)	No recovery.	
		7.50 - 9.00 7.50	C SPT	N=19 (2,3/4,4,6,5)	0				7.50 (5.97)	Firm dark grey mottled light grey CLAY with occasional pockets of cemented orangish brown silt (up to 15 mm x 10 mm ) and randomly orientated elongated black organic material and lignite (up to 35 mm x 2 mm).	
		7.82 - 8.00	CS		100	18	18		8.36 (5.11)	Extremely weak to medium strong light and dark grey fine grained highly to slightly weathered fossiliferous LIMESTONE with black lignite and decomposed organic material (up to 85 mm x 5 mm).	8
		9.00 - 10.50 9.00	C SPT	50 (50 for 0mm/50 for 0mm)					9.16 (4.31)	Stiff predominantly indistinctly laminated dark grey occasionally greenish grey CLAY.	9
		9.20 - 9.50	CS		80						10

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								6.00	7.00	Air/Mist	grey	100	100
								7.00	7.50	Air/Mist	grey	100	100
								7.50	9.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was originally advanced from ground level using rotary techniques, however the borehole was terminated at 5.00 m bgl due to the casing becoming jammed. The borehole was repositioned and was terminated at 15.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/03/2022 - 08/03/2022
Location:		Contractor: Sweco	Co-ords: E508943.03 N299531.69
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH120 &amp; BH120A</b>	Hole Type RC	Level 13.47m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description			
		Depth (m)	Type	Results	TCR	SCR	RQD						
		10.50 - 12.00 10.50	C SPT	N=22 (3,4/5,6,6,5)					10.20 (3.27)	Stiff predominantly indistinctly laminated dark grey occasionally greenish grey CLAY. AZCL	11		
		10.88 - 11.10	CS						10.50 (2.97)	Stiff predominantly indistinctly laminated dark grey occasionally greenish grey CLAY.			
		12.00 - 13.50 12.00	C SPT	N=23 (3,4/5,5,6,7)					40		11.10 (2.37)	AZCL	12
		12.50 - 12.80	CS						100		12.00 (1.47)	Stiff predominantly indistinctly laminated dark grey occasionally greenish grey CLAY with occasional partings (up to 30 mm x 4 mm) and nodules (10 mm x 10 mm) of light grey calcareous silt.	
		13.25 - 13.50	CS										13
		13.50 - 15.00 13.50	C SPT	N=24 (4,4/5,6,6,7)									
		13.70 - 13.95	CS										14
		14.72 - 15.00	CS										
									15.00	End of Borehole at 15.00m	15		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
15.00	121	12.50	121					9.00	10.50	Air/Mist	grey	100	100
								10.50	12.00	Air/Mist	grey	100	100
								12.00	13.50	Air/Mist	grey	100	100
								13.50	15.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was originally advanced from ground level using rotary techniques, however the borehole was terminated at 5.00 m bgl due to the casing becoming jammed. The borehole was repositioned and was terminated at 15.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).





GROUND TECHNOLOGY  
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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH120 & BH120A

Project ID: GT0386



BH120 & BH120A 1.20 m to 3.00 m



BH120 & BH120A 3.00 m to 5.00 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH120 & BH120A

Project ID: GT0386



BH120 & BH120A 5.00 m to 7.00 m



BH120 & BH120A 7.00 m to 9.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH120 & BH120A

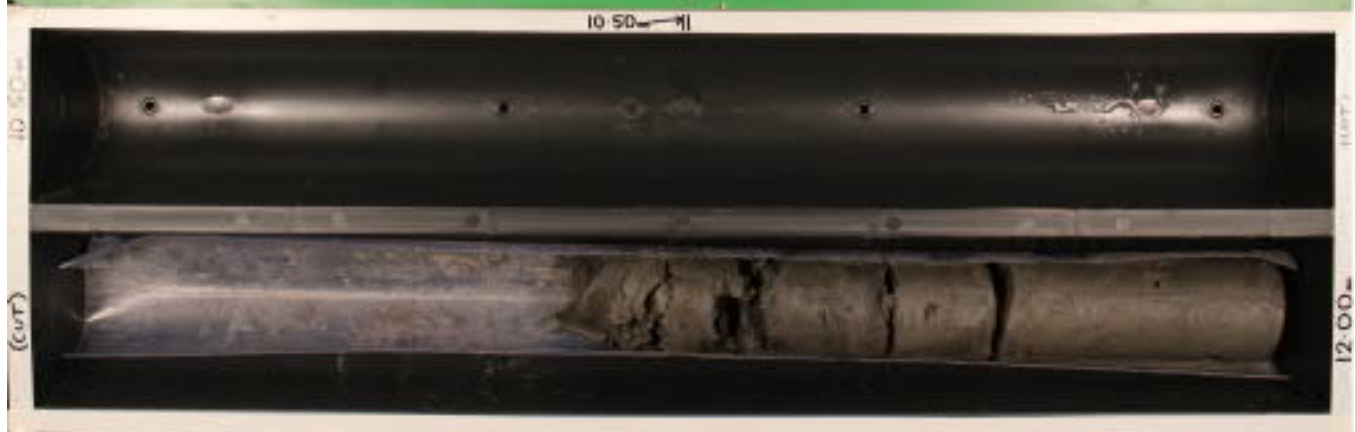
Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>09/03/22</b>
HOLE ID <b>BH120 &amp; BH120A</b>	DEPTH <b>9.00 m - 10.50 m</b>	CORE RUN <b>08</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
<b>GROUND TECHNOLOGY</b>		



BH120 & BH120A 9.00 m to 10.50 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>09/03/22</b>
HOLE ID <b>BH120 &amp; BH120A</b>	DEPTH <b>10.50 m - 12.00 m</b>	CORE RUN <b>09</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
<b>GROUND TECHNOLOGY</b>		



BH120 & BH120A 10.50 m to 12.00 m





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 Norfolk, NR17 1ZA  
 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH120 & BH120A

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 09 / 03 / 22
HOLE ID BH120 & BH120A	DEPTH 12.00 m - 13.50 m	CORE RUN 10
 GROUND TECHNOLOGY	Grey Scale 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	Colour Control Patches 	



BH120 & BH120A 12.00 m to 13.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 09 / 03 / 22
HOLE ID BH120 & BH120A	DEPTH 13.50 m - 15.00 m	CORE RUN 11
 GROUND TECHNOLOGY	Grey Scale 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	Colour Control Patches 	



BH120 & BH120A 13.50 m to 15.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509029.65 N299615.08
Project No. : GT0386		Crew Name: JC / DL+DB / MC	Drilling Equipment: Beretta T44   Dando 3000

Borehole Number <b>BH121</b>	Hole Type RC	Level 19.70m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.20 0.20	B ES					(19.70)	Brown clayey gravelly SAND with common fine rootlets. Sand is fine to coarse. Gravel is angular and subangular fine and medium flint and limestone.	
		0.50 0.50	B ES					0.50 (19.20)	Yellowish brown clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine and medium flint and limestone.	
		1.00 1.00	B ES					1.50 (18.20)	Firm brown and bluish grey mottled black very clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium flint and limestone.	
		1.50 - 2.00 1.50	B cSPT	N=16 (2,2/3,3,5,5)				2.00 (17.70)	Stiff grey slightly gravelly slightly sandy clayey SILT. Sand is fine to coarse. Gravel is subrounded fine limestone.	
		2.00	B					3.50 (16.20)	Medium strong light brown and yellowish brown with orange staining sandy oolitic LIMESTONE. Sand is fine and medium. Recovered as angular and subangular fragments (30 - 120 mm).	
		2.50 - 2.95 2.50	D SPT	N=25 (2,3/5,6,7,7)				4.00 (15.70)	Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered material is medium strong light brown and yellowish brown with orange staining sandy oolitic LIMESTONE. Sand is fine and medium. Recovered as angular and subangular fragments (25 - 100 mm).	
		3.50 - 4.00 3.50	C cSPT	N=50 (20,42/50 for 0mm)	70	30	0			
		3.60 - 3.80	D							
		4.00 - 5.50 4.00	C cSPT	N=50 (50 for 75mm/50 for 0mm)	43	20	20			

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								3.50	4.00	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 5.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and from 5.00 m bgl to the base with bentonite. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 30/03/2022
Location:	Contractor: Sweco	Co-ords: E509029.65 N299615.08
Project No. : GT0386	Crew Name: JC / DL+DB / MC	Drilling Equipment: Beretta T44   Dando 3000

Borehole Number <b>BH121</b>	Hole Type RC	Level 19.70m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description						
		Depth (m)	Type	Results	TCR	SCR	RQD									
		5.34 - 5.50	CS	N=50 (50 for 0mm/50 for 0mm)	87	65	60		5.20 (14.50)	Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered material is medium strong light brown and yellowish brown with orange staining sandy oolitic LIMESTONE. Sand is fine and medium. Recovered as angular and subangular fragments (25 - 100 mm). Very strong to extremely strong light brown and yellowish brown oolitic LIMESTONE. Discontinuities are 5 - 10 degrees medium spaced (65/240/300) probably open undulating rough unstained. (Fresh Grade I). 5.70 m to 5.80 m recovered as angular and subangular fragments (20 mm to 80 mm)	6					
		5.50 - 7.00 5.50	C cSPT													
		5.80 - 5.96	CS													
		6.40 - 6.60	CS													
		6.65 - 6.95	CS						6.60 (13.10)	Weak to moderately weak yellowish brown highly calcareous SANDSTONE. Sand is fine. Discontinuities absent. (Fresh Grade I).						
		7.00 - 8.00 7.00	B cSPT	N=14 (2,2/2,4,4,4)					6.95 (12.75)	Medium dense to dense yellowish brown and light brown slightly clayey slightly gravelly SAND. Sand is fine and medium. Gravel is subrounded fine limestone. 7.00 m to 8.00 m 2 no. Subangular clasts (60 to 90 mm) of medium strong oolitic limestone	7					
		8.00 - 9.00 8.00	B cSPT	N=30 (2,3/5,7,9,9)							8					
		9.00 - 10.00 9.00 - 9.65 9.00	C B SPT	N=39 (2,9/9,9,10,11)							9					
		9.70 - 10.00	B						9.65 (10.05)	Very dense thickly interbedded light grey and yellowish brown slightly gravelly clayey SAND. Sand is fine and medium. Gravel is subrounded fine and medium limestone.						
		10.00 - 10.60	B						(9.70)		10					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.00	5.50	Air/Mist	brown	100	100
								5.50	7.00	Air/Mist	brown	100	100
								9.00	10.00	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 5.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and from 5.00 m bgl to the base with bentonite. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509029.65 N299615.08
Project No. : GT0386		Crew Name: JC / DL+DB / MC	Drilling Equipment: Beretta T44   Dando 3000

Borehole Number <b>BH121</b>	Hole Type RC	Level 19.70m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.00 - 11.00 10.00	C SPT	N=50 (5,7/9,10,15,16)	80				10.20	Very dense thickly interbedded light grey and yellowish brown slightly gravelly clayey SAND. Sand is fine and medium. Gravel is subrounded fine and medium limestone. No recovery.
		10.60 - 11.00	B							
		11.00 - 12.00 11.00 - 12.00 11.00	B C SPT	N=75 (5,14/75 for 225mm)	100				12.00 (7.70)	Very dense brown and greyish brown fine and medium SAND
		12.00 - 13.00 12.00 - 13.00 12.00	B C SPT	N=63 (4,9/10,13,14,26)						
		13.00 - 13.50	D		100				13.65 (6.05)	13.60 m to 13.65 m mottled black and orange with angular clasts (<70 mm) of medium strong brown sandy oolitic limestone. Medium dense interbedded light grey mottled dark grey and brown sandy slightly clayey SILT. Sand is fine and medium.
13.70 - 15.00	B									
					100				15.00	14.80 m to 15.00 m thinly and thickly interlaminated light grey and grey fine sand, silt and clay
End of Borehole at 15.00m										

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
13.00	121	10.50	121					10.00	11.00	Air/Mist	No return	0	0
								11.00	12.00	Air/Mist	brown	100	100
								12.00	13.00	Air/Mist	brown	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 5.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel, and from 5.00 m bgl to the base with bentonite. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH121

Project ID: GT0386



BH121 3.50 m to 5.50 m



BH121 5.50 m to 7.00 m





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 Victory Park, Attleborough  
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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH121

Project ID: GT0386



BH121 7.00 m to 9.00 m



BH121 9.00 m to 11.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH121

Project ID: GT0386



BH121 11.00 m to 13.00 m



BH121 13.00 m to 15.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 23/03/2022 - 25/03/2022
Location:	Contractor: Sweco	Co-ords: E509148.84 N299600.94
Project No. : GT0386	Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH122</b>	Hole Type RC	Level 23.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		0.00 - 0.30	B						(23.20)	Dark and light brown slightly sandy slightly gravelly Clay with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint, limestone.	
		0.00 - 0.30	ES								
		0.30 - 1.20	B						0.30	Medium dense orangish brown and light brown clayey SAND and GRAVEL with low cobble content. Sand is fine to coarse. Gravel is predominantly subangular and subrounded occasionally tabular fine to coarse quartzite, black rinded flint, sandstone and occasional limestone. Cobbles are subrounded quartzite. (limestone gravels slight to moderate weathering grades II & III)	
		0.30 - 1.20	ES								
		1.20 - 2.20	C	N=24 (4,4/6,6,6,6)	100					1.20	2.10 to 2.20 reddish brown fine sand
		1.50 - 1.60	D								
		2.20 - 3.20	C	N=22 (6,9/4,5,6,7)	95					2.20	No recovery.
		2.60 - 2.80	B								
		3.20 - 3.40	C	N=32 (3,4/3,5,14,10)	100					3.15	Dense orangish brown and light brown slightly clayey very gravelly SAND with low cobble content. Sand is fine to coarse. Gravel is predominantly subangular and subrounded occasionally tabular fine to coarse quartzite, black rinded flint, sandstone and occasional limestone. Cobbles are subrounded quartzite. (limestone gravels slight to moderate weathering grade II III)
		3.40 - 4.10	B								
3.40 - 4.10	D	N=33 (4,6/6,8,9,10)	50					3.40	Stiff light grey occasionally dark grey gravelly sandy clayey SILT. Sand is fine. Gravel is subrounded fine limestone.		
3.50 - 3.60	D										
4.10 - 4.50	C	N=33 (4,6/6,8,9,10)	100					4.10	Stiff light grey mottled orangish brown slightly gravelly SILT/CLAY. Gravel is angular to subangular fine to coarse quartzite and rinded flint (up to 40 mm x 30 mm)		
4.10	cSPT										
4.60 - 4.78	CS		70					4.85	AZCL		
4.60 - 4.78	CS										
5.00 - 6.50	C							5.00			

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	yellow	100	100
								2.20	3.20	Air/Mist	yellow	100	100
								3.20	3.40	Air/Mist	yellow	100	100
								4.10	4.50	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 23/03/2022 - 25/03/2022
Location:		Contractor: Sweco	Co-ords: E509148.84 N299600.94
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH122</b>	Hole Type RC	Level 23.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		6.02 - 6.20	CS	50 (50 for 75mm/50 for 0mm)	80	13	9		(18.20)	Medium strong yellowish orangish light brown fine to medium grained Oolitic LIMESTONE with occasional dissolution features. Predominantly non intact with reddish brown staining on discontinuities (Moderately occasionally highly weathered Grade III).
		6.20 - 6.20	AZCL		6.20 (17.00)					
		6.50 - 8.00 6.50	C cSPT		100	53	34		6.50 (16.70)	Strong light grey and grey slightly fossiliferous oolitic LIMESTONE with occasional voids with orangish brown silt infill. Fractures are 15-30 degrees very closely to medium spaced (40 mm - 220 mm) open with fine sand infill, rough, stepped. (slightly and moderately weathered Grade II and III).
		7.00 - 7.20	CS		100	58	52			
		8.00 - 9.50 8.00	C cSPT		100	58	52			
	8.30 - 8.52	CS								
	9.50 - 11.00 9.50	C cSPT								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		10.00	121					5.00	6.50	Air/Mist	No return	0	0
								6.50	8.00	Air/Mist	No return	0	0
								8.00	9.50	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 23/03/2022 - 25/03/2022
Location:		Contractor: Sweco	Co-ords: E509148.84 N299600.94
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH122</b>	Hole Type RC	Level 23.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.10 - 10.24	CS						10.30 (12.90)	Strong light grey and grey slightly fossiliferous oolitic LIMESTONE with occasional voids with orangish brown silt infill. Fractures are 15-30 degrees very closely to medium spaced (40 mm - 220 mm) open with fine sand infill, rough, stepped. (slightly and moderately weathered Grade II and III). No recovery.	
		11.00 - 12.00 11.00	C cSPT	N=21 (4,4/5,5,5,6)					11.00 (12.20)	Dense yellowish light brown occasionally dark reddish brown silty SAND. Sand is fine and medium.	11
		11.40 - 11.50	D		50						
		12.00 - 13.00 12.00	C cSPT	N=50 (6,11/10,11,13,16)					12.00 (11.20)	Dense yellowish light brown (increasingly localised dark reddish brown mottling after 12.60 m) silty fine SAND.	12
		12.60 - 12.70	D		100						
		13.00 - 14.00 13.00	C cSPT	N=44 (4,8/9,10,11,14)							13
		13.50 - 13.60	D		100						
		14.00 - 15.00	C								14
		14.50 - 14.60	D		100						
		15.00 - 16.00	C								15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.50	11.00	Air/Mist	yellow	0	0
								11.00	12.00	Air/Mist	green	0	0
								12.00	13.00	Air/Mist	yellow	0	0
								13.00	14.00	Air/Mist	yellow	0	0
								14.00	15.00	Air/Mist	yellow	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 23/03/2022 - 25/03/2022
Location:		Contractor: Sweco	Co-ords: E509148.84 N299600.94
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH122</b>	Hole Type RC	Level 23.20m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 5
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
█		15.50 - 15.60	D	N=52 (4,16/11,8,13,20)	100			15.43 (7.77)	Dense yellowish light brown (increasingly localised dark reddish brown mottling after 12.60 m) silty fine SAND.	
		15.80 - 15.90	D						Dense yellowish light brown (increasingly localised dark reddish brown mottling with depth) slightly gravelly silty SAND. Gravels are predominantly subangular to subrounded occasionally tabular fine to coarse ferruginous sandstone and occasional ferruginous nodules of cemented silt.	
		16.00 - 16.50 16.00	C cSPT	N=41 (3,3/6,10,11,14)	100			16.50 (6.70)	No recovery.	
		16.50	cSPT						0	0
		17.60 - 17.70	D	N=50 (8,11/14,11,11,14)	80	0	0	17.00 (6.20)	Dense yellowish light brown and reddish brown silty fine SAND.	
		18.00	cSPT						17.80 (5.40)	No recovery.
		18.50 - 18.60	D	N=61 (10,10/10,11,19,21)	80	0	0	18.00 (5.20)	Dense to very dense yellowish brown and reddish brown silty fine SAND.	
		19.00	cSPT						18.80 (4.40)	No recovery.
		19.40 - 19.50	D		0	0	0	19.00 (4.20)	Very dense grey occasionally mottled orangish brown slightly gravelly silty SAND. Sand is fine. Gravels are subangular to subrounded fine to coarse sandstone and cemented silt (up to 30 mm x 10 mm and 15 mm x 5 mm respectively)	
								20.00		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
20.00	121							15.00 16.00	16.00 16.50	Air/Mist Air/Mist	yellow yellow	0 0	0 0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was backfilled under the instruction of Sweco from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1.







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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH122

Project ID: GT0386



BH122 1.20 m to 3.20 m



BH122 3.20 m to 4.10 m



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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH122

Project ID: GT0386



BH122 4.10 m to 5.00 m



BH122 5.00 m to 6.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH122

Project ID: GT0386



BH122 6.50 m to 8.00 m



BH122 8.00 m to 9.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH122

Project ID: GT0386



BH122 9.50 m to 11.00 m



BH122 11.00 m to 13.00 m



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH122

Project ID: GT0386



BH122 13.00 m to 15.00 m



BH122 15.00 m to 17.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH122

Project ID: GT0386



BH122 17.00 m to 19.00 m



BH122 19.00 m to 20.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try		Date: 24/03/2022 - 28/03/2022	
Location:		Contractor: Sweco		Co-ords: E509149.36 N299561.47	
Project No. : GT0386		Crew Name: MG / GC		Drilling Equipment: Beretta T44	

Borehole Number <b>BH123</b>	Hole Type RC	Level 22.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		0.10 - 0.20	ES						(22.45)	Dark and light brown slightly sandy slightly gravelly CLAY with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint and limestone.	
		0.40 - 0.50	ES						0.30 (22.15)	Medium dense orangish brown and light brown slightly silty very gravelly SAND with low cobble content. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse quartzite, black rinded flint, sandstone and limestone. Cobbles are subrounded quartzite.	
		1.20 - 2.00	B						1.20 (21.25) 2.00 (21.25) 1.35	No recovery. Medium dense orangish brown and light brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine to coarse limestone and chert/flint. (Reworked/Engineered fill).	
		2.00 - 3.00 2.00	B cSPT	N=19 (3,4/5,4,5,5)					63	2.00 (20.45)	Medium dense brown calcareous very sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine and medium mixed lithologies including chert and limestone. (Reworked/Engineered fill).
		3.00 - 4.00 3.00	B cSPT	N=18 (2,4/4,5,5,4)					100	3.00 (19.45)	Medium dense grey calcareous slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine and medium mixed lithologies including chert and limestone. (Reworked/Engineered fill).
	4.00 - 4.20 4.00	D cSPT	N=27 (3,4/6,6,7,8)						4.00 (18.45)	Minimal recovery. Core loss presumed to be more weathered/weaker material. Recovered material is angular to well rounded medium and coarse chert and flint GRAVEL, and stiff light grey mottled orangish brown slightly calcareous silty CLAY.	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.00	Air/Mist	Brown	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 3.50 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 3.50 m bgl with gravel, and with bentonite from 3.50 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 24/03/2022 - 28/03/2022
Location:		Contractor: Sweco	Co-ords: E509149.36 N299561.47
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH123</b>	Hole Type RC	Level 22.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.50	cSPT	N=30 (4,5/7,7,8,8)					5.50 (16.95)	Minimal recovery. Core loss presumed to be more weathered/weaker material. Recovered material is angular to well rounded medium and coarse chert and flint GRAVEL, and stiff light grey mottled orangish brown slightly calcareous silty CLAY.
		6.30 - 6.48	CS		67	52	52			AZCL
		7.00	cSPT	50 (50 for 25mm/50 for 0mm)					6.04 (16.41)	Strong to very strong light brown to yellowish brown locally speckled black sandy oolitic LIMESTONE. Sand is fine. Occasional voids ( up to 10 mm). Discontinuities are 0 - 10 degrees closely spaced (40/180/350) probably open, undulating rough stained brown, possibly with greyish-brown clay veneer and occasional calcite mineralisation (up to 2 mm). Occasional impersistent sub-vertical (80 - 85 degrees) discontinuities, incipient to possibly open with calcite mineralisation (up to 1 mm). (Slightly weathered Grade II to Unweathered Grade I).
		8.22 - 8.50	CS		100	92	55			
		8.50	cSPT	50 (50 for 15mm/50 for 0mm)					8.50 (13.95)	Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered material is strong very thinly to thinly bedded (0 - 20 degree) light brown to yellowish brown slightly sandy oolitic LIMESTONE. Occasional voids (up to 25 mm). Discontinuities are 0 - 10 degrees medium spaced (180/-/330) open undulating rough unstained with sandy veneer. (Slightly weathered Grade II to unweathered Grade I).

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.00	5.50	Air/Mist	Grey	100	100
								5.50	7.00	Air/Mist	Brown	100	100
								8.50	10.00	Air/Mist	Brown	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 3.50 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 3.50 m bgl with gravel, and with bentonite from 3.50 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 24/03/2022 - 28/03/2022
Location:		Contractor: Sweco	Co-ords: E509149.36 N299561.47
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH123</b>	Hole Type RC	Level 22.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.00	cSPT	50 (50 for 20mm/50 for 0mm)					10.07 (12.38)	Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered material is strong very thinly to thinly bedded (0 - 20 degree) light brown to yellowish brown slightly sandy oolitic LIMESTONE. Occasional voids (up to 25 mm). Discontinuities are 0 - 10 degrees medium spaced (180/-/330) open undulating rough unstained with sandy veneer. (Slightly weathered Grade II to unweathered Grade I).
					10					Minimal recovery. Core loss presumed to be more weathered/weaker material. Recovered as yellowish brown fine and medium SAND.
		11.50	cSPT	N=26 (5,4/6,6,6,8)					11.50 (10.95)	Medium dense to dense yellowish brown fine and medium SAND.
						100				
		12.50	cSPT	N=33 (6,7/7,8,9,9)						
					67					
		14.00	cSPT	N=42 (6,8/8,10,11,13)						
					100					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								10.00	11.50	Air/Mist	No return	0	0
								11.50	12.50	Air/Mist	No return	0	0
								12.50	14.00	Air/Mist	No return	0	0
								14.00	15.00	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 3.50 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 3.50 m bgl with gravel, and with bentonite from 3.50 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 24/03/2022 - 28/03/2022
Location:		Contractor: Sweco	Co-ords: E509149.36 N299561.47
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH123</b>	Hole Type RC	Level 22.45m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.00	cSPT	N=47 (9,10/11,10,12,14)						Medium dense to dense yellowish brown fine and medium SAND.	
		16.00	cSPT	N=58 (10,10/12,13,15,18)	100				16.00 (6.45)	Very dense yellowish brown to orangish brown fine and medium SAND.	16
		17.00	cSPT	N=56 (11,10/13,12,14,17)	100						17
		18.00	cSPT	N=61 (10,12/11,14,17,19)	100						18
		19.00	cSPT	N=68 (9,12/12,15,17,24)	100				19.00 (3.45)	Very dense greyish brown fine and medium SAND.	19
								20.00	End of Borehole at 20.00m	20	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
20.00	121	20.00	121					15.00	16.00	Air/Mist	No return	0	0
								16.00	17.00	Air/Mist	No return	0	0
								17.00	18.00	Air/Mist	No return	0	0
								18.00	19.00	Air/Mist	No return	0	0
								19.00	20.00	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m, the target depth. The borehole was installed with plain pipe from ground level to 1.00 m bgl and slotted pipe from 1.00 m bgl to 3.50 m bgl. The borehole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 3.50 m bgl with gravel, and with bentonite from 3.50 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH123

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 29 / 03 / 22
HOLE ID BH123	DEPTH 1.20 m - 3.00 m	CORE RUN 01-02

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH123 1.20 m to 3.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 29 / 03 / 22
HOLE ID BH123	DEPTH 3.00 m - 5.50 m	CORE RUN 3-4

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH123 3.00 m to 5.50 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH123

Project ID: GT0386



BH123 5.50 m to 7.00 m



BH123 7.00 m to 8.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH123

Project ID: GT0386



BH123 8.50 m to 10.00 m



BH123 10.00 m to 11.50 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH123

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 29 / 03 / 22
HOLE ID BH123	DEPTH 11.50 m - 14.00 m	CORE RUN 9 - 10

GROUND TECHNOLOGY

Grey Scale

Colour Control Patches

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BH123 11.50 m to 14.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 29 / 03 / 22
HOLE ID BH123	DEPTH 14.00 m - 16.00 m	CORE RUN 11 - 12

GROUND TECHNOLOGY

Grey Scale

Colour Control Patches

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BH123 14.00 m to 16.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling  
 Supplementary GI

BH123

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>AL7 WANSFORD to SUTTON</b>	DATE <b>29 / 03 / 22</b>
HOLE ID <b>BH123</b>	DEPTH <b>16.00</b> m - <b>18.00</b> m	CORE RUN <b>13 - 14</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Patches</small>	



BH123 16.00 m to 18.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>AL7 WANSFORD to SUTTON</b>	DATE <b>29 / 03 / 22</b>
HOLE ID <b>BH123</b>	DEPTH <b>18.00</b> m - <b>20.00</b> m	CORE RUN <b>15 - 16 (EOBH)</b>
 <b>GROUND TECHNOLOGY</b>	 <small>Grey Scale</small>	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 <small>Colour Control Patches</small>	



BH123 18.00 m to 20.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 31/03/2022 - 01/04/2022
Location:		Contractor: Sweco	Co-ords: E509214.71 N299585.36
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH124</b>	Hole Type RC	Level 23.18m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.50	B					(23.18)	Soft light and dark brown slightly sandy slightly gravelly CLAY with common fine rootlets. Sand is fine to coarse. Gravel is predominantly subangular to subrounded fine to coarse flint, limestone occasionally tabular angular fine to coarse flint.	
		1.00 - 1.30	B					0.50 (22.68)	Orangish brown and light brown slightly silty SAND and GRAVEL with low cobble content. Sand is fine to coarse. Gravel is predominantly subangular and subrounded occasionally tabular fine to coarse quartzite, black rimmed flint, sandstone and limestone. Cobbles are subrounded limestone. (Limestone gravels slight to moderate weathering grades II & III)	
		1.50 - 1.80	CS		90			1.35 (21.83) 1.45 (21.73)	Yellowish brown occasionally mottled reddish brown sandy SILT. Sand is fine. Yellowish brown occasionally mottled orangish grey slightly gravelly slightly sandy clayey SILT with occasional nodules of cemented grey silt (up to 10 mm x 2 mm). Sand is fine. Gravelly subrounded fine limestone.	
		2.00	cSPT	N=31 (3,4/6,7,9,9)				2.00 (21.18)	Stiff becoming very stiff yellowish brown occasionally mottled orangish grey SILT / CLAY with occasional nodules of cemented grey silt (up to 10 mm x 2 mm).	
		2.50 - 2.80	CS		90			2.80 (20.38)	Stiff becoming very stiff yellowish brown occasionally mottled orangish grey SILT with occasional nodules of cemented grey silt (up to 5 mm x 2 mm).	
		3.00	cSPT	N=38 (4,6/7,9,10,12)				3.00 (20.18)	Very stiff yellowish brown mottled orangish light grey SILT/CLAY with occasional nodules of cemented grey silt (up to 5 mm x 2 mm).	
		3.50 - 3.80	CS		53			3.80 (19.38)	AZCL	
		4.50 - 4.65 4.50	CS cSPT	N=46 (4,7/9,11,12,14)				4.50 (18.68)	Very stiff yellowish brown mottled orangish light grey SILT/CLAY with occasional nodules of cemented grey silt (up to 5 mm x 2 mm). Strong light grey and grey slightly fossiliferous oolitic LIMESTONE with occasional voids with orangish brown silt infill. Fractures are predominantly 15-30 degrees very closely to medium spaced (40 mm - 220 mm) open with fine sand infill, rough, stepped. (slightly and moderately weathered Grade II and III).	
								4.85 (18.33)		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.00	Air/Mist	No return	0	0
								2.00	3.00	Air/Mist	No return	0	0
								3.00	4.50	Air/Mist	Brown	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m, the target depth. The borehole was installed with plain pipe from ground level to 5.00 m bgl and slotted pipe from 5.00 m bgl to 10.00 m bgl. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 10.00 m bgl with gravel, and with bentonite from 10.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 31/03/2022 - 01/04/2022
Location:		Contractor: Sweco	Co-ords: E509214.71 N299585.36
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH124</b>	Hole Type RC	Level 23.18m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		6.00 - 6.13 6.00	CS cSPT	50 (21,28/50 for 0mm)	40	0	0		5.10 (18.08)	Strong light grey and grey slightly fossiliferous oolitic LIMESTONE with occasional voids with orangish brown silt infill. Fractures are predominantly 15-30 degrees very closely to medium spaced (40 mm - 220 mm) open with fine sand infill, rough, stepped. (slightly and moderately weathered Grade II and III). AZCL
		6.50 - 6.82	CS		100	31	14		6.00 (17.18)	Strong light grey and grey fossiliferous oolitic LIMESTONE with inclusions of dark rounded clasts of siltstone (up to 60 mm x 30 mm) and occasional calcite veins (up to 15 mm x 1 mm) occasional voids with orangish brown silt infill. Fractures are predominantly 15-30 degrees closely spaced (70 mm - 200 mm) open with reddish brown staining with fine sand infill, rough, stepped. (slightly to moderately weathered Grade II and III).
		7.50	cSPT	50 (47 for 105mm/50 for 0mm)	95	75	58			
		9.00	cSPT	N=87 (23,14/17,19,24,27)	7				9.00 (14.18) 9.10 (14.08)	Very dense reddish brown slightly gravelly silty fine SAND. Gravells are subangular to subrounded limestone cemented silt nodules. No recovery.

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
6.00	121							4.50	6.00	Air/Mist	Brown	100	100
								6.00	7.50	Air/Mist	No return	0	0
								7.50	9.00	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m, the target depth. The borehole was installed with plain pipe from ground level to 5.00 m bgl and slotted pipe from 5.00 m bgl to 10.00 m bgl. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 10.00 m bgl with gravel, and with bentonite from 10.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 31/03/2022 - 01/04/2022
Location:		Contractor: Sweco	Co-ords: E509214.71 N299585.36
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH124</b>	Hole Type RC	Level 23.18m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.50	cSPT	N=80 (10,11/15,19,20,26)					10.50 (12.68)	No recovery.	
		10.55 - 10.65 10.80 - 10.90	D D						10.70 (12.48)	Very dense orangish brown occasionally mottled dark grey and reddish brown clayey slightly gravelly SAND. Sand is fine. Gravel is subrounded fine and medium limestone.	
					75					Very dense orangish brown occasionally mottled dark grey and reddish brown silty gravelly fine SAND with occasional pockets of black lignitic silt (up to 40 mm x 20 mm). Gravells are subrounded to rounded fine to coarse limestone and cemented nodules of silt.	11
									11.25 (11.93)	No recovery.	
		11.50	cSPT	111 (14,21/111 for 218mm)					11.50 (11.68)	Very dense orangish brown occasionally mottled dark grey and reddish brown silty gravelly fine SAND with occasional pockets of black lignitic silt (up to 40 mm x 20 mm). Gravells are subrounded to rounded fine to coarse limestone and cemented nodules of silt.	12
					75						
		12.50 - 12.60 12.50	D cSPT	50 (19,46/50 for 39mm)					12.25 (10.93)	No recovery.	
									12.50 (10.68)	Very dense orangish brown fine SAND with occasional reddish brown and light and dark grey mottling.	13
					75						
		13.50 - 13.60 13.50	D cSPT	99 (21,43/99 for 109mm)					13.25 (9.93)	No recovery.	
									13.50 (9.68)	Very dense orangish brown fine SAND with occasional reddish brown and light and dark grey mottling.	14
					100						
		14.50	cSPT	50 (47 for 136mm/50 for 0mm)							
									15.00	End of Borehole at 15.00m	15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		15.00	121					9.00	10.50	Air/Mist	No return	0	0
								10.50	11.50	Air/Mist	No return	0	0
								11.50	12.50	Air/Mist	No return	0	0
								12.50	13.50	Air/Mist	No return	0	0
								13.50	14.50	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m, the target depth. The borehole was installed with plain pipe from ground level to 5.00 m bgl and slotted pipe from 5.00 m bgl to 10.00 m bgl. The borehole was backfilled from ground level to 5.00 m bgl with bentonite, from 5.00 m bgl to 10.00 m bgl with gravel, and with bentonite from 10.00 m bgl to the base of the borehole. The borehole was finished with a top hat cover secured into place with bentonite. SPT Hammer Ref: SIS1.





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH124

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 06/04/22
HOLE ID BH124	DEPTH 1.20 m - 3.00 m	CORE RUN 1-2
 GROUND TECHNOLOGY	  GROUND TECHNOLOGY Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk	



BH124 1.20 m to 3.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 06/04/22
HOLE ID BH124	DEPTH 3.00 m - 4.50 m	CORE RUN 3
 GROUND TECHNOLOGY	  GROUND TECHNOLOGY Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk	



BH124 3.00 m to 4.50 m



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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH124

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 06/04/22
HOLE ID BH124	DEPTH 4.50 m - 7.50 m	CORE RUN 4 - 5
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH124 4.50 m to 7.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 06/04/22
HOLE ID BH124	DEPTH 7.50 m - 9.00 m	CORE RUN 6
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH124 7.50 m to 9.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH124

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 06/04/22
HOLE ID BH124	DEPTH 9.00 m - 10.50 m	CORE RUN 7
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH124 9.00 m to 10.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 06/04/22
HOLE ID BH124	DEPTH 10.50 m - 12.50 m	CORE RUN 8-9
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH124 10.50 m to 12.50 m





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# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH124

Project ID: GT0386



BH124 12.50 m to 14.50 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509311.24 N299565.69
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH125</b>	Hole Type RC	Level 21.10m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.40	ES						(21.10)	Soft dark brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium flint.
		0.40 - 0.70	ES						0.30 (20.80)	Very stiff bluish grey and orangish brown mottled black slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone.
		1.20 - 2.00	C							
		1.55 - 1.75	CS		100					
		2.00 - 3.50 2.00	C cSPT	N=28 (3,4/6,7,7,8)						
		2.85 - 2.95	D		67	67			2.80 (18.30)	Stiff light grey occasionally mottled orangish brown sandy SILT/CLAY, Sand is fine.
		3.50 - 3.60 3.50 - 4.50 3.50	D C cSPT	N=5 (0,1/0,1,2,2)					3.00 (18.10)	No recovery.
		4.50 - 5.50 4.50	C cSPT	N=12 (1,1/2,3,3,4)					3.50 (17.60)	Loose light grey mottled orangish grey fine SAND.
				50				4.00 (17.10)	No recovery.	
								4.50 (16.60)	Firm light grey mottled orangish slightly gravelly sandy CLAY. Sand is fine , gravel is angular to subangular fine to coarse fine to medium grained slightly fossiliferous Oolitic limestone.	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.00	Air/Mist	brown	100	100
								2.00	3.50	Air/Mist	brown	100	100
								3.50	4.50	Air/Mist	orange	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509311.24 N299565.69
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH125</b>	Hole Type RC	Level 21.10m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.50 - 7.00 5.50	C cSPT	N=50 (5,7/50 for 195mm)	100				5.50 (15.60)	Firm light grey mottled orangish slightly gravelly sandy CLAY. Sand is fine , gravel is angular to subangular fine to coarse fine to medium grained slightly fossiliferous Oolitic limestone.	
		5.85 - 6.09	CS		100	67	49				Predominantly strong occasionally very weak light orangish grey mottled orangish brown fossiliferous oolitic LIMESTONE with occasional voids with orange brown silt infill (up to 15 mm x 5 mm). Fractures are predominantly 15-20 degrees very closely to medium spaced (40 mm - 340 mm) open with reddish brown staining and fine sandy silt infill, rough, stepped. (slightly and moderately weathered Grade II and III).
		6.75 - 6.93	CS								
		7.00 - 7.35 7.00 - 8.50 7.00	CS C cSPT	N=50 (17,26/50,0,0,0)						7.00 (14.10)	AZCL
		8.50 - 10.00 8.50	C cSPT		N=30 (50,0/30,0,0,0)	65	60	25			7.50 (13.60)
		9.24 - 9.50	CS			67	50	42			
								10.00	End of Borehole at 10.00m	10	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.00	121	7.00	121					4.50	5.50	Air/Mist	orange	100	100
								5.50	7.00	Air/Mist	white	100	100
								7.00	8.50	Air/Mist	white	100	100
								8.50	10.00	Air/Mist	white	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was backfilled from ground level to 0.50 m bgl with arisings and from 0.50 m bgl to the base of the borehole with bentonite. SPT Hammer Ref: SIS1.





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH125

Project ID: GT0386



BH125 1.20 m to 3.50 m



BH125 3.50 m to 5.50 m



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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH125

Project ID: GT0386



BH125 5.50 m to 7.00 m



BH125 7.00 m to 8.50 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH125

Project ID: GT0386



BH125 8.50 m to 10.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022
Location:		Contractor: Sweco	Co-ords: E509409.40 N299538.49
Project No. : GT0386		Crew Name: DB / MC+MG / DC	Drilling Equipment: Dando 3000   Beretta T44

Borehole Number <b>BH126</b>	Hole Type RC	Level 20.42m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		0.10 0.10	B ES					(20.42)	Soft dark grey slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium flint.		
		0.50 0.50	B ES					0.50 (19.92)	Very stiff bluish grey and orangish brown mottled black slightly gravelly slightly sandy slightly clayey SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone .		
		1.20 1.20	B ES								
		1.50 - 1.95 1.50	D SPT	N=38 (3,3/5,6,9,18)							
		2.50 - 2.91 2.50	D SPT	N=51 (3,8/51 for 260mm)					2.50 (17.92)		Hard light greyish brown mottled yellowish brown and bluish grey slightly sandy slightly clayey SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine limestone.
		2.90 - 3.00 3.00 - 4.50	B C						3.00 (17.42)		Firm to stiff orangish brown mottled grey CLAY with occasional ordered limestone lithorelics (<70 mm).
		3.90 - 4.05	CS		67	50	0		3.50 (16.92)		Weak becoming moderately weak with depth very thinly to thinly bedded (15 - 20 degrees) light brown to yellowish brown and orangish brown locally sandy and shell fragmental oolitic LIMESTONE. Sand is medium and coarse. Discontinuities are 15 - 20 degrees medium spaced (150/340/710) probably open, undulating rough slightly brown stained with greyish brown clay veneer; 75 - 85 degrees are probably incipient to open, undulating rough sometimes slightly brown stained with greyish brown clay veneer. (Slightly weathered Grade II).
		4.50 - 6.00 4.50	C cSPT	50 (50 for 70mm/50 for 0mm)					(15.92) 4.70		AZCL

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
3.00	200	3.00	200					3.00	4.50	Air/Mist	white	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 0.50 m bgl with plain pipe and from 0.50 m bgl to 2.50 m bgl with slotted pipe. The hole was backfilled from ground level to 0.50 m bgl with bentonite, from 0.50 m bgl to 2.50 m bgl with gravel and from 2.50 m bgl to 10.50 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022
Location:		Contractor: Sweco	Co-ords: E509409.40 N299538.49
Project No. : GT0386		Crew Name: DB / MC+MG / DC	Drilling Equipment: Dando 3000   Beretta T44

Borehole Number <b>BH126</b>	Hole Type RC	Level 20.42m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.20 - 5.44	CS							
		6.00 - 7.50 6.00	C cSPT	50 (50 for 45mm/50 for 0mm)	67	60	50		5.95 (14.47)	Moderately weak to medium strong very thin to thinly bedded (10 - 15 degrees) yellowish brown and orangish brown locally sandy and shell fragmental oolitic LIMESTONE. Sand is medium and coarse. Discontinuities are 10-15 degrees closely spaced (20/140/200) probably open rarely infilled with greyish brown clay (0/0/5) undulating rough, brown stained occasionally with greyish brown clay veneer. Occasional 70-75 degrees probably open, undulating rough, unstained. (Slightly weathered Grade II).
		6.61 - 6.78	CS		53	50	30			
		7.50 - 9.00 7.50	C cSPT	50 (50 for 30mm/50 for 0mm)					7.40 (13.02)	Thickly interbedded medium strong to strong medium bedded (0 - 5 degrees) light brown and yellowish brown very sandy and shell fragmental oolitic LIMESTONE, and extremely weak to very weak medium bedded (0 - 5 degrees) yellowish brown slightly sandy shell fragmental oolitic LIMESTONE. Discontinuities are 0 - 5 degrees closely spaced (40/150/300) probably open, undulating rough, occasionally with greyish brown clay veneer. In weaker beds occasional discontinuities 80 - 90 degrees probably open undulating rough with slight greyish brown clay veneer.
		7.99 - 8.29	CS		53	45	30			
		9.00 - 10.50 9.00	C cSPT	50 (50 for 25mm/50 for 0mm)					8.65 (11.77)	AZCL
		9.68 - 9.91	CS		53	50	40		9.30 (11.12)	Thickly interbedded medium strong to strong medium bedded (0 - 5 degrees) light brown and yellowish brown very sandy and shell fragmental oolitic LIMESTONE, and extremely weak to very weak medium bedded (0 - 5 degrees) yellowish brown slightly sandy shell fragmental oolitic LIMESTONE. Discontinuities are 0 - 5 degrees closely spaced (40/150/440) probably open rarely infilled (0/0/5) with greyish brown clay, undulating rough, occasionally with greyish brown clay veneer.

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.50	6.00	Air/Mist	white	100	100
								6.00	7.50	Air/Mist	white	100	100
								7.50	9.00	Air/Mist	white	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 0.50 m bgl with plain pipe and from 0.50 m bgl to 2.50 m bgl with slotted pipe. The hole was backfilled from ground level to 0.50 m bgl with bentonite, from 0.50 m bgl to 2.50 m bgl with gravel and from 2.50 m bgl to 10.50 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1 (Beretta) & 12-4 (Dando 3000).







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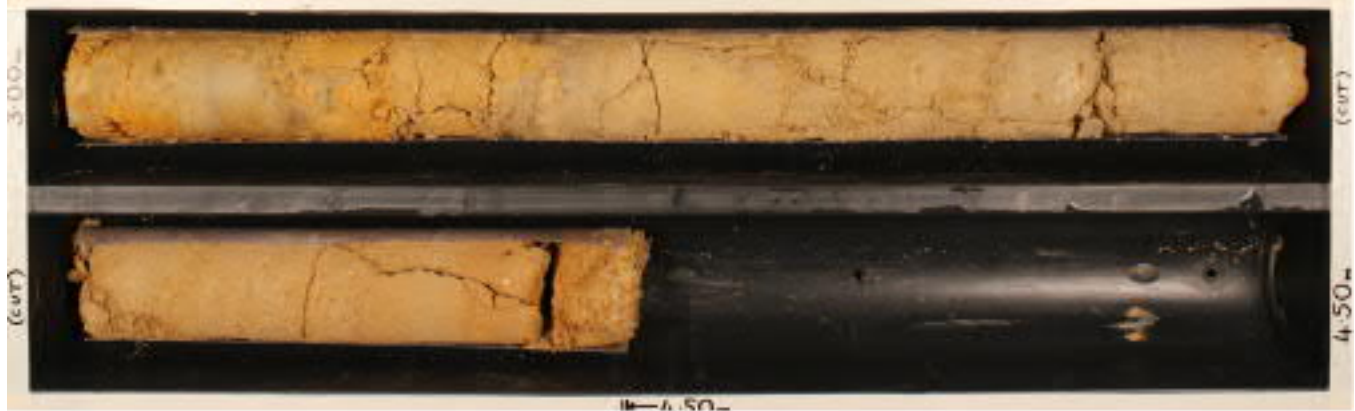
# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH126

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 30 / 03 / 22
HOLE ID BH126	DEPTH 3.00 m - 4.50 m	CORE RUN 1
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH126 3.00 m to 4.50 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 30 / 03 / 22
HOLE ID BH126	DEPTH 4.50 m - 6.00 m	CORE RUN 2
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH126 4.50 m to 6.00 m



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH126

Project ID: GT0386



BH126 6.00 m to 7.50 m



BH126 7.50 m to 9.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH126

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>30 / 03 / 22</b>
HOLE ID <b>BH126</b>	DEPTH <b>9.00 m - 10.50 m</b>	CORE RUN <b>05 (EOBH)</b>
 <b>GROUND TECHNOLOGY</b>	 Depth Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Plate	



BH126 9.00 m to 10.50 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 21/03/2022
Location:		Contractor: Sweco	Co-ords: E509458.95 N299479.25
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH127</b>	Hole Type RC	Level 19.98m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.40	ES					(19.98)	Firm brown slightly gravelly sandy CLAY. Sand is fine and medium. Gravel is angular and subangular fine chert.	
		0.40 - 1.20	ES					0.40 (19.58)	Brown slightly calcareous clayey SAND. Sand is fine to coarse.	
		1.20 - 2.20	C	N=68 (3,13/10,14,14,30)	65				1.30 (18.68)	Very dense yellowish brown slightly calcareous clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine and medium chert and limestone. <i>1.60 m to 1.85 m calcareous</i>
		1.30 - 1.85	B						1.85 (18.13)	
		2.20 - 2.70	B	N=54 (8,8/10,14,15,15)	100				2.20 (17.78)	Very dense yellowish brown calcareous clayey very gravelly SAND. Sand is fine to coarse. Gravel is angular to subrounded fine and medium chert and limestone.
		2.20 - 2.70	C						2.90 (17.08)	
		2.70 - 3.70	C	N=55 (4,6/8,8,19,20)	80				3.10 (16.88)	
		2.90 - 3.00	B						3.70 (16.28)	Very dense grey and brown GRAVEL. Gravel is very angular to subangular fine to coarse mixed lithologies including chert and limestone. <i>4.15 m subangular cobble (100 mm x 100 mm x 70 mm) very strong limestone</i>
		3.70 - 4.50	C	N=60 (13,41/11,14,16,19)	69				4.25 (15.73)	
		3.70	cSPT						4.50	cSPT

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	orange	100	100
								2.20	2.70	Air/Mist	orange	100	100
								2.70	3.70	Air/Mist	orange	100	100
								3.70	4.50	Air/Mist	orange	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 7.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 7.00 m bgl with gravel and from 7.00 m bgl to 10.00 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 21/03/2022
Location:		Contractor: Sweco	Co-ords: E509458.95 N299479.25
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH127</b>	Hole Type RC	Level 19.98m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.50	cSPT	N=69 (8,10/10,19,19,21)	0					No recovery.
		6.50	cSPT	50 (8,14/50 for 10mm)	0					
		7.50 - 8.50 7.50	C cSPT	50 (50 for 140mm/50 for 0mm)					7.50 (12.48)	Medium strong to strong thinly bedded light brown oolitic locally shell fragmental LIMESTONE. Discontinuities are 10 - 20 degrees, closely spaced (50/80/230) probably open slightly brown stained with yellowish brown clayey sand veneer. Occasional 60 - 70 degree fractures, probably open, slightly brown stained. (Slightly weathered Grade II). 7.50 m to 7.64 m NI recovered as subangular fragments (<75 mm) of limestone
		7.89 - 8.10	CS		100	86	70			
		8.50 - 10.00 8.50	C cSPT	50 (50 for 120mm/50 for 0mm)					8.50 (11.48) 8.75	<b>AZCL</b> Medium strong to strong thinly bedded light brown oolitic locally shell fragmental LIMESTONE. Discontinuities are 10 - 20 degrees, closely spaced (50/80/230) probably open slightly brown stained with yellowish brown clayey sand veneer. Occasional 60 - 70 degree fractures, probably open, slightly brown stained. (Slightly weathered Grade II).
	9.19 - 9.38	CS		83	75	55				
								10.00		End of Borehole at 10.00m

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.00	121	7.50	121					4.50	5.50	Air/Mist	yellow	100	100
								5.50	6.50	Air/Mist	yellow	100	100
								6.50	7.50	Air/Mist	yellow	100	100
								7.50	8.50	Air/Mist	yellow	100	100
								8.50	10.00	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 7.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 7.00 m bgl with gravel and from 7.00 m bgl to 10.00 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH127

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>AL7 WANSFORD to SUTTON</b>	DATE <b>23 / 03 / 22</b>
HOLE ID <b>BH127</b>	DEPTH <b>1.20 m - 2.70 m</b>	CORE RUN <b>01-02</b>
 <b>GROUND TECHNOLOGY</b>	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH127 1.20 m to 2.70 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>AL7 WANSFORD to SUTTON</b>	DATE <b>23 / 03 / 22</b>
HOLE ID <b>BH127</b>	DEPTH <b>2.70 m - 4.50 m</b>	CORE RUN <b>03-04</b>
 <b>GROUND TECHNOLOGY</b>	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	



BH127 2.70 m to 4.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH127

Project ID: GT0386



BH127 4.50 m to 6.50 m



BH127 6.50 m to 8.50 m



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# Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

BH127

Project ID: GT0386



BH127 8.50 m to 10.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 04/03/2022 - 08/03/2022
Location:		Contractor: Sweco	Co-ords: E507446.62 N300130.95
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH128</b>	Hole Type RC	Level 19.47m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.60	ES					(19.47)	Soft brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular and subangular fine to coarse sandy oolitic limestone.	
		0.60 - 1.20	ES					0.60 (18.87)	Soft grey and brown mottled black slightly organic silty CLAY with occasional fibrous plant remains.	
		1.20 - 2.20 1.20	C SPT	N=0 (0,0/0,0,0,0)					1.20 (18.27)	Very soft to soft dark brown and dark grey locally mottled black organic silty CLAY with rare pockets (< 140 mm) of plastic amorphous peat.
		1.50 - 1.60	D		100					
		2.20 - 3.70 2.20	C SPT	N=0 (0,0/0,0,0,0)					2.20 (17.27)	AZCL
		2.50 - 2.70			75				2.50 (16.97) 2.70 (16.77)	Very soft to soft dark brown and dark grey locally mottled black organic silty CLAY with rare pockets (< 140 mm) of plastic amorphous peat.
		3.00 - 3.10	D							Very soft grey mottled yellowish brown CLAY with occasional amorphous rootlets and root traces.
		3.20 - 4.20 3.20	C SPT	N=0 (0,0/0,0,0,0)						2.70 m to 2.80 m firm grey calcareous very sandy clay. Sand is fine and medium oolites
		3.70 - 4.00	CS		90					
		4.20 - 5.20 4.20	C SPT	N=2 (0,0/1,0,1,0)						
4.70 - 5.00	CS		90							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	grey	100	100
								2.20	3.70	Air/Mist	grey	100	100
								3.20	4.20	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 5.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel and from 5.00 m bgl to 15.00 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 04/03/2022 - 08/03/2022
Location:		Contractor: Sweco	Co-ords: E507446.62 N300130.95
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH128</b>	Hole Type RC	Level 19.47m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.20 - 6.20 5.20	C SPT	N=3 (1,1/1,0,1,1)	85				5.20 (14.27)	Very soft grey mottled yellowish brown CLAY with occasional amorphous rootlets and root traces.	
									5.35 (14.12)	5.10 m to 5.20 m heavily mottled yellowish brown, locally extremely weakly cemented (ferruginous) AZCL	
									5.90 (13.57)	Very soft and soft grey mottled yellowish brown CLAY. 5.70 m to 5.80 m heavily mottled yellowish brown, locally extremely weakly cemented (ferruginous)	
		6.10 - 6.20 6.20 - 7.20 6.20	D C SPT	N=11 (1,2/2,2,3,4)	75				6.20 (13.27)	AZCL	
									6.45 (13.02)	Firm indistinctly laminated dark grey CLAY with rare shell fragments (< 15 mm).	
					7.20 - 8.20 7.20	C SPT	N=15 (2,2/2,3,4,6)	85			
						7.35 (12.12)	Firm indistinctly laminated dark grey CLAY with rare shell fragments (< 15 mm).				
						8.00 - 8.10	D	N=24 (3,4/4,4,7,9)	100		
		8.20 - 9.20 8.20	C SPT								
		8.95 - 9.20	CS					N=21 (3,3/4,5,4,8)	100		
9.20 - 10.50 9.20	C SPT										
9.90 - 10.20	CS										

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.20	5.20	Air/Mist	grey	100	100
								5.20	6.20	Air/Mist	grey	100	100
								6.20	7.20	Air/Mist	grey	100	100
								7.20	8.20	Air/Mist	grey	100	100
								8.20	9.20	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 5.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel and from 5.00 m bgl to 15.00 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 04/03/2022 - 08/03/2022
Location:		Contractor: Sweco	Co-ords: E507446.62 N300130.95
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH128</b>	Hole Type RC	Level 19.47m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.50 - 12.00 10.50	C SPT	N=32 (5,7/7,7,9,9)					10.20 (9.27)	Firm indistinctly laminated dark grey CLAY with rare shell fragments (< 15 mm).  Stiff locally laminated to thinly bedded (40-50 degrees inclined) dark grey CLAY with occasional shell fragments (< 20 mm) sometimes pyritised.
		11.50 - 11.75	CS		100					
		12.00 - 13.50 12.00	C SPT	N=33 (3,7/7,8,8,10)					11.80 (7.67)	Very stiff locally laminated to thinly bedded (40 - 50 degrees inclined) dark grey CLAY with occasional shell fragments (<40 mm).  <i>12.20 m to 13.10 m series of very closely to closely spaced polished surfaces (40 to 50 degrees correspondent with laminations). No striations apparent</i>
		12.45 - 12.75	CS		100					
		13.50 - 15.00 13.50	C SPT	N=35 (4,8/7,8,10,10)						
		14.20 - 14.50	CS		97					<i>14.00 m to 14.80 m series of closely spaced slightly polished surfaces (40 to 50 degrees correspondent with laminations). No striations apparent</i>  <i>14.80 m to 15.00 m stiff, crumbly texture, disrupted fabric</i>
									15.00	End of Borehole at 15.00m

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
15.00	121	12.00	121					9.20	10.50	Air/Mist	grey	100	100
								10.50	12.00	Air/Mist	grey	100	100
								12.00	13.50	Air/Mist	grey	100	100
								13.50	15.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 15.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 5.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 5.00 m bgl with gravel and from 5.00 m bgl to 15.00 m bgl with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH128

Project ID: GT0386



BH128 1.20 m to 3.20 m



BH128 3.20 m to 5.20 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH128

Project ID: GT0386





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH128

Project ID: GT0386



BH128 9.20 m to 10.50 m



BH128 10.50 m to 12.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH128

Project ID: GT0386



BH128 12.00 m 13.50 m



BH128 13.50 m to 15.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/03/2022
Location:		Contractor: Sweco	Co-ords: E509456.87 N299470.24
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH129</b>	Hole Type RC	Level 19.83m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description		
		Depth (m)	Type	Results	TCR	SCR	RQD					
		0.00 - 0.40	B						(19.83)	Firm brown slightly sandy slightly gravelly silty CLAY with rootlets (<1 mm) and root traces and occasional pseudo fibrous plant remains. Sand is fine and medium. Gravel is very angular to well rounded fine and medium chert and limestone.		
		0.10 - 0.20	D									
		0.10 - 0.20	ES									
				0.40 - 0.50	ES					(19.53)	Orangish brown gravelly clayey SAND. Sand is fine to coarse. Gravel is very angular to rounded fine and medium mixed lithologies including chert, limestone. Occasional pockets (<150 mm) of firm brown slightly sandy slightly gravelly clay.	
				0.40 - 0.80	B							
				0.50 - 0.60	D							
				1.20 - 2.20	B	N=23 (4,5/5,6,7)					1.20	Medium dense dark yellowish brown slightly calcareous slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to rounded fine to coarse mixed lithologies including chert and limestone. Occasional pockets (<150 mm) of firm brown slightly gravelly sandy clay.
				1.20 - 2.20	C							
				1.20	cSPT							
				2.20 - 3.20	B	N=27 (5,5/5,6,8,8)					1.20	
		2.20 - 3.20	C									
		2.20	cSPT									
		3.20 - 4.20	C	N=37 (5,9/8,9,9,11)					3.20	AZCL Dense grey and brown GRAVEL. Gravel is very angular to subangular fine to coarse mixed lithologies including chert and limestone.		
		3.20	cSPT									
		3.40 - 3.60	D									
		3.70 - 4.20	B						3.65	Dark yellowish brown slightly calcareous clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to rounded fine to coarse mixed lithologies including chert and limestone. Occasional pockets (<150 mm) of firm brown slightly gravelly sandy clay.		
		4.20 - 4.50	B	N=37 (8,8/8,9,10,10)					4.20	Dense grey and brown clayey sandy GRAVEL. Sand is fine to coarse. Gravel is very angular to subangular fine to coarse mixed lithologies.		
		4.20 - 4.50	C									
		4.20	cSPT									
		4.50 - 5.20	B	50 (50 for 0mm/50 for 0mm)					4.50	Dense dark yellowish brown slightly calcareous clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is very angular and angular fine and medium mixed lithologies.		
		4.50 - 6.00	C									
		4.50	cSPT									

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	orange	100	100
								2.20	3.20	Air/Mist	orange	100	100
								3.20	4.20	Air/Mist	orange	100	100
								4.20	4.50	Air/Mist	white	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 5.00 m bgl with bentonite and from 5.00 m bgl to 10.50 m bgl with gravel. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 22/03/2022
Location:		Contractor: Sweco	Co-ords: E509456.87 N299470.24
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH129</b>	Hole Type RC	Level 19.83m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.20 - 5.40	D						5.20 (14.63)	Dense dark yellowish brown slightly calcareous clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is very angular and angular fine and medium mixed lithologies. Light brown slightly sandy GRAVEL. Sand is medium and coarse. Gravel is angular to rounded medium and coarse chert and limestone.
		5.83 - 6.00	CS		100	32	18		5.45 (14.38)	
		6.00 - 7.50 6.00	C cSPT	50 (50 for 0mm/50 for 0mm)						Moderately weak very thinly bedded (10 - 15 degrees) light yellowish brown sandy oolitic shell fragmental LIMESTONE with occasional voids (<10 mm). Sand is coarse. Fractures are 10 degrees, closely spaced (35/60/150), probably open, planar to undulating rough slightly brown stained.
										6.25 m to 6.29 m NI
					93	80	39			6.70 m to 6.80 m NI
		7.07 - 7.18	CS							
		7.50 - 9.00 7.50	C cSPT	50 (50 for 0mm/50 for 0mm)					7.35 (12.48)	Medium strong to strong very thinly bedded (10 - 15 degrees) light yellowish brown mottled light brown slightly sandy oolitic shell fragmental LIMESTONE. Sand is coarse. Fractures are 10 degrees, closely spaced (40/120/320), probably open, planar to undulating rough slightly brown stained. Occasional sub vertical (85-90 degrees) fractures, impersistent open to incipient, undulating rough, slightly brown stained. (Slightly weathered Grade II to Fresh Grade I).
					95	93	71			7.35 m to 7.40 m NI
		8.56 - 8.79	CS							8.30 m to 8.35 m NI
		9.00 - 10.50 9.00	C cSPT	50 (50 for 0mm/50 for 0mm)						
		9.14 - 9.32	CS		97	91	61			9.74 m to 9.79 m NI

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		6.00	121					4.50	6.00	Air/Mist	white	100	100
								6.00	7.50	Air/Mist	yellow	100	100
								7.50	9.00	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 5.00 m bgl with plain pipe and from 5.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 5.00 m bgl with bentonite and from 5.00 m bgl to 10.50 m bgl with gravel. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.







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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH129

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 03 / 22</b>
HOLE ID <b>BH129</b>	DEPTH <b>1.20 m - 3.20 m</b>	CORE RUN <b>01 - 02</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH129 1.20 m to 3.20 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>24 / 03 / 22</b>
HOLE ID <b>BH129</b>	DEPTH <b>3.20 m - 4.50 m</b>	CORE RUN <b>03 - 04</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH129 3.20 m to 4.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH129

Project ID: GT0386

PROJECT NO: GT0386	PROJECT NAME: A47 WANSFORD to SUTTON	DATE: 24 / 03 / 22
HOLE ID: BH129	DEPTH: 4.50 m - 6.00 m	CORE RUN: 05
 <b>GROUND TECHNOLOGY</b>	 Grayscale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Chart	



BH129 4.50 m to 6.00 m

PROJECT NO: GT0386	PROJECT NAME: A47 WANSFORD to SUTTON	DATE: 24 / 03 / 22
HOLE ID: BH129	DEPTH: 6.00 m - 7.50 m	CORE RUN: 06
 <b>GROUND TECHNOLOGY</b>	 Grayscale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Chart	



BH129 6.00 m to 7.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH129

Project ID: GT0386



BH129 7.50 m to 9.00 m



BH129 9.00 m to 10.50 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022 - 29/03/2022
Location:		Contractor: Sweco	Co-ords: E509234.62 N299974.20
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH130</b>	Hole Type RC	Level 30.07m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.50	ES					(30.07)	Brown clayey gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone.	
		0.50 - 1.20	ES					0.50 (29.57)	Stiff greyish brown and yellow sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine and medium limestone.	
		1.20 - 2.00 1.20	C cSPT	50 (3,18/50 for 10mm)				1.20 (28.87)	Partial recovery. Core loss presumed to be more weathered/weaker material. Recovered core comprises strong light brown and yellowish brown LIMESTONE with locally frequent to abundant (20 - 30 %) shell fragments and whole bivalve shells (<55 mm) and occasional calcite veins (<2 mm). Recovered as angular fragments (< 90 mm) and occasional full core pieces (<140 mm), with a little matrix of soft brown slightly calcareous clay.	
		1.70 - 1.84	CS		55	22	14			
		2.00 - 3.00 2.00	C cSPT	50 (50 for 0mm/50 for 0mm)						
					45	8	0			
		3.00 - 4.00 3.00	C cSPT	50 (72 for 90mm/50 for 0mm)					3.00 m to 4.00 m heavy orange staining and black dendritic mottling on fossil surfaces and calcite veins	
					60	21	0			
		4.00 - 5.00 4.00	C cSPT	50 (50 for 0mm/50 for 0mm)				4.00 (26.07)	3.95 m to 4.00 m extremely weak yellowish brown mottled black slightly calcareous siltstone AZCL	
		4.50 - 4.65	D		40	0	0			
		4.80 - 4.90	D					4.60 (25.47)	Stiff locally thickly laminated to thinly bedded (20 - 30 degrees) grey mottled yellowish brown and black (lignitic) slightly calcareous CLAY with occasional partings and lenses of light grey and brown silt/fine sand. Locally abundant shells and shelly debris.	
		5.00 - 6.00	C							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		3.00	121					1.20	2.00	Air/Mist	yellow	100	100
								2.00	3.00	Air/Mist	yellow	100	100
								3.00	4.00	Air/Mist	yellow	100	100
								4.00	5.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 6.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel and from 6.00 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022 - 29/03/2022
Location:		Contractor: Sweco	Co-ords: E509234.62 N299974.20
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH130</b>	Hole Type RC	Level 30.07m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		5.00	SPT	N=26 (4,6/6,6,6,8)						Stiff locally thickly laminated to thinly bedded (20 - 30 degrees) grey mottled yellowish brown and black (lignitic) slightly calcareous CLAY with occasional partings and lenses of light grey and brown silt/fine sand. Locally abundant shells and shelly debris.	
		5.56 - 5.73	CS		75						
		6.00 - 7.00 6.00	C cSPT	N=20 (3,4/5,5,5,5)					6.00 (24.07)	AZCL	6
		6.75 - 7.00	CS		60				6.40 (23.67)	Stiff locally thickly laminated to thinly bedded (20 - 30 degrees) grey mottled yellowish brown and black (lignitic) slightly calcareous CLAY with occasional partings and lenses of light grey and brown silt/fine sand. Locally abundant shells and shelly debris.	
		7.00 - 8.00 7.00	C cSPT	50 (30,36/50 for 10mm)					7.00 (23.07)	AZCL	7
		7.56 - 7.76	CS		65				7.35 (22.72)	Stiff grey mottled dark grey and yellowish brown silty CLAY, grading with depth to grey mottled orange clayey SILT.	
		7.80 - 8.00	D						7.80 (22.27)	Medium strong light grey mottled orange fine SANDSTONE with pockets of SAND, SILT and CLAY. Sand is fine.	
		8.00 - 9.00	C						8.00 (22.07)	No recovery.	8
		8.50 - 9.00	B		55				8.45 (21.62)	Medium dense light greyish brown clayey gravelly SAND. Sand is fine to coarse. Gravel is angular and subangular fine sandstone.	
		9.00 - 10.00 9.00	C cSPT	65 (8,19/65 for 163mm)					9.00 (21.07)	No recovery.	9
	9.60 - 10.00	B		40				9.60 (20.47)	Very dense light greyish brown and yellowish brown fine SAND.		
								10.00	End of Borehole at 10.00m	10	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.00	121							5.00	6.00	Air/Mist	grey	100	100
								6.00	7.00	Air/Mist	grey	100	100
								7.00	8.00	Air/Mist	grey	100	100
								8.00	9.00	Air/Mist	grey	100	100
								9.00	10.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 6.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 6.00 m bgl with gravel and from 6.00 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH130

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>31 / 03 / 22</b>
HOLE ID <b>BH130</b>	DEPTH <b>1.20 m - 3.00 m</b>	CORE RUN <b>1 - 2</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH130 1.20 m to 3.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>31 / 03 / 22</b>
HOLE ID <b>BH130</b>	DEPTH <b>3.00 m - 5.00 m</b>	CORE RUN <b>3 - 4</b>

**GROUND TECHNOLOGY**

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BH130 3.00 m to 5.00 m





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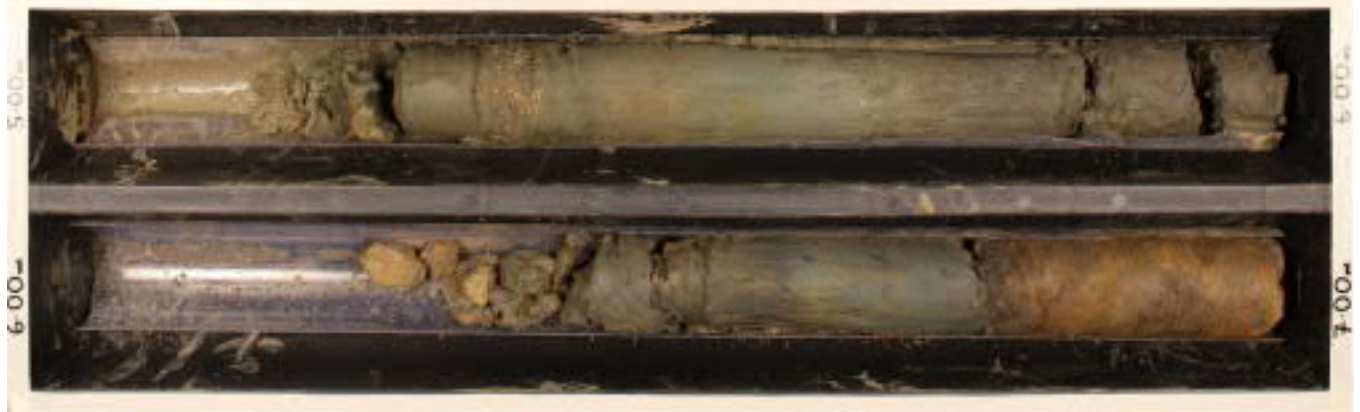
# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH130

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>31 / 03 / 22</b>
HOLE ID <b>BH130</b>	DEPTH <b>5.00 m - 7.00 m</b>	CORE RUN <b>5-6</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH130 5.00 m to 7.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>31 / 03 / 22</b>
HOLE ID <b>BH130</b>	DEPTH <b>7.00 m - 9.00 m</b>	CORE RUN <b>7-8</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH130 7.00 m to 9.00 m



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# Photographic Report

Project: Wansford to Sutton Dualling  
 Supplementary GI

BH130

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 31 / 03 / 22
HOLE ID BH130	DEPTH 9.00 m - 10.00 m	CORE RUN 09 (EOBH)
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH130 9.00 m to 10.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022 - 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509332.97 N299773.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH131</b>	Hole Type RC	Level 29.37m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.30	ES					(29.37)	Firm to stiff brown calcareous slightly sandy slightly gravelly silty CLAY with low cobble content and few fine rootlets. Sand is fine to coarse. Gravel is angular and subangular fine to coarse yellowish brown limestone.	
		0.30 - 0.70	ES					0.30 (29.07)	Light yellowish brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine and medium limestone.	
		1.50 - 3.00	C					1.20 (28.17)	No recovery.	
		1.85 - 2.07	CS					1.70 (27.67) 1.85 (27.52)	Soft/firm yellowish brown sandy CLAY matrix with frequent subangular blocky clasts (up to 50 x 50 x 80 mm) of very strong yellowish brown LIMESTONE. Clasts surfaces are moderately black speckled and brown stained.	
		2.35 - 2.60	CS		87	25	23	2.30 (27.07)	Probably strong (sampled) becoming medium strong with depth yellowish brown LIMESTONE with frequent fossil shells (<35 mm) that are moderately orangish brown stained and black speckled. Discontinuities are possibly closely spaced (70/-/220) subhorizontal (<10 degrees) probably open, undulating rough slightly black speckled and brown stained. (Slightly weathered Grade II)	
		2.80 - 3.00	D					3.00 (26.37)	2.08 m to 2.15 m NI recovered as rubbly irregular clasts (<65 mm) of medium strong yellowish brown speckled black and stained brown limestone	
		3.00 - 4.50 3.00	C cSPT	N=24 (4,4/5,6,6,7)				3.25 (26.12)	2.20 m to 2.30 m rapidly grading through to very weak	
		3.40 - 3.50	D					3.25 (26.12)	Stiff indistinctly laminated yellowish brown mottled greyish brown calcareous CLAY with occasional ordered lithorelics (<40 mm) of very weak calcareous silty sandstone. 2.80 m thin lamination of black lignitic silt AZCL	
		3.97 - 4.27	CS		83			4.60	Very stiff dark grey and grey CLAY with locally frequent pockets and lenses (<10 mm) of light grey silt and fine sand. 3.28 m to 3.38 m orangish brown, sandy. Sand is fine 3.80 m to 4.05 m dark grey, blocky crumbly texture	
		4.50 - 6.00 4.50	C cSPT	N=36 (4,5/6,8,10,12)				(24.87) 4.60	AZCL	
							4.95 (24.42)	Very stiff indistinctly laminated (10 degrees) dark grey to black CLAY with abundant white shell debris and shelly partings.		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		4.50	121					1.50 3.00	3.00 4.50	Air/Mist Air/Mist	brown green	100 100	100 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 0.50 m bgl with plain pipe and from 0.50 m bgl to 2.50 m bgl with slotted pipe. The hole was backfilled from ground level to 0.50 m bgl with bentonite, from 0.50 m bgl to 2.50 m bgl with gravel and from 2.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022 - 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509332.97 N299773.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH131</b>	Hole Type RC	Level 29.37m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.24 - 5.54	CS						5.24 (24.13)	Very stiff indistinctly laminated (10 degrees) dark grey to black CLAY with abundant white shell debris and shelly partings.
		6.00 - 7.50 6.00	C cSPT	N=49 (5,7/8,11,14,16)	93					Very stiff bluish grey slightly mottled dark grey CLAY with occasional dark grey sub-vertical burrow traces/root traces.  5.73 m, 5.79 m and 5.85 m (mid points) 3 x parallel shear surfaces 35 to 45 degrees, undulating polished striated
		6.75 - 7.00	CS		97					6.70 m subangular nodule (<35 mm) of light brown siltstone 6.82 m to 7.00 m locally thickly laminated with shelly partings 7.04 m (mid point) shear surface 36 degrees, undulating polished striated
		7.20 - 7.50	CS							
		7.50 - 9.00 7.50	C cSPT	N=68 (7,10/13,16,18,21)						7.50 m to 8.10 m becoming silty slightly sandy. Sand is fine
		7.70 - 7.80	D							
		7.90 - 8.00	D							
		8.20 - 8.60	B		98				8.10 (21.27)	7.95 m to 8.10 m occasional subhorizontal (<5 degrees) partings of light grey fine sand Grey streaked black fine SAND. Black streaks are near-vertical of silt/clay infill, up to 5 mm wide 200 mm long, possibly trace fossils.
		8.82 - 9.00	CS						8.65 (20.72)	Very stiff dark grey CLAY with frequent scattered shells (<30 mm) and subhorizontal (<5 degrees) shelly partings. 8.65 m to 8.85 m slightly sandy. Sand is fine
		9.00 - 10.50 9.00	C cSPT	N=74 (7,12/15,18,20,21)					(20.37) 9.07	9.07 m to 9.35 m tending to extremely weak mudstone  9.35 m to 9.45 m very weak black organic mudstone with occasional pyritised wood/plant debris (<20 mm) AZCL
		9.60 - 9.90	CS		95	63	63		9.95 (19.42)	Very stiff black CLAY to extremely weak MUDSTONE. Crumbly blocky texture with glossy surfaces.

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								4.50	6.00	Air/Mist	grey	100	100
								6.00	7.50	Air/Mist	grey	100	100
								7.50	9.00	Air/Mist	grey	100	100



**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 0.50 m bgl with plain pipe and from 0.50 m bgl to 2.50 m bgl with slotted pipe. The hole was backfilled from ground level to 0.50 m bgl with bentonite, from 0.50 m bgl to 2.50 m bgl with gravel and from 2.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.

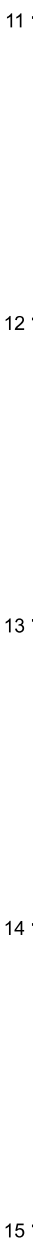


# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/03/2022 - 30/03/2022
Location:		Contractor: Sweco	Co-ords: E509332.97 N299773.97
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Tecop Tec 15

Borehole Number <b>BH131</b>	Hole Type RC	Level 29.37m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 3
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		10.10 - 10.20	D						10.30 (19.07)	Very stiff black CLAY to extremely weak MUDSTONE. Crumbly blocky texture with glossy surfaces.
									10.50	Very weak grey MUDSTONE with subvertical black lignitic traces (<5 mm x 100 mm).
										End of Borehole at 10.50m



Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.50	121							9.00	10.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.50 m which was the target depth. The borehole was installed from ground level to 0.50 m bgl with plain pipe and from 0.50 m bgl to 2.50 m bgl with slotted pipe. The hole was backfilled from ground level to 0.50 m bgl with bentonite, from 0.50 m bgl to 2.50 m bgl with gravel and from 2.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH131

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 04 / 22
HOLEID BH131	DEPTH 1.50 m - 3.00 m	CORE RUN 01

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH131 1.50 m to 3.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 04 / 22
HOLEID BH131	DEPTH 3.00 m - 4.50 m	CORE RUN 02

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH131 3.00 m to 4.50 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH131

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 04 / 22
HOLE ID BH131	DEPTH 4.50 m - 6.00 m	CORE RUN 03
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH131 4.50 m to 6.00 m

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 04 / 22
HOLE ID BH131	DEPTH 6.00 m - 7.50 m	CORE RUN 04
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH131 6.00 m to 7.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH131

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 04 / 22
HOLE ID BH131	DEPTH 7.50 m - 9.00 m	CORE RUN 05

**GROUND TECHNOLOGY**

Grey Scale

Colour Check/Reference

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BH131 7.50 m to 9.00 m

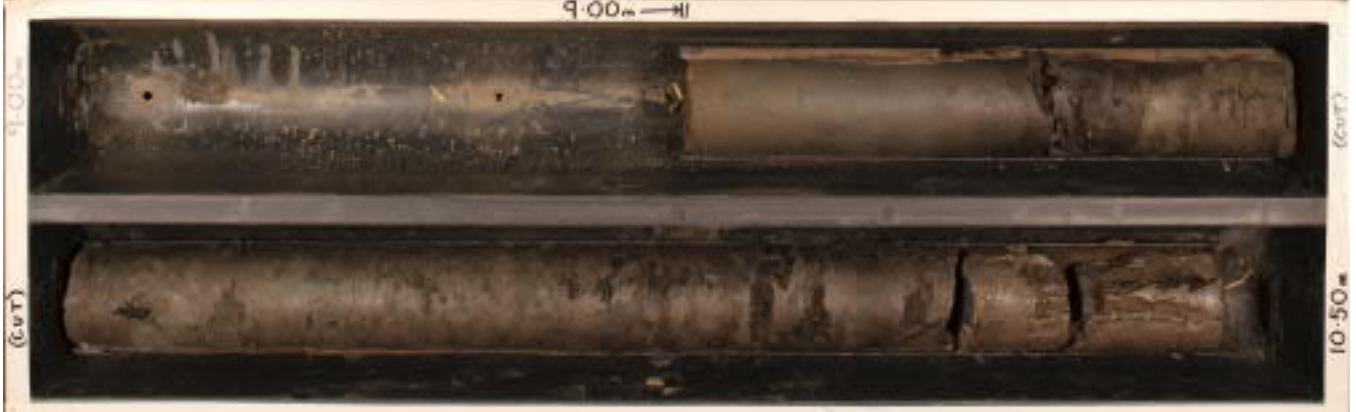
PROJECT NO GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 01 / 04 / 22
HOLE ID BH131	DEPTH 9.00 m - 10.50 m	CORE RUN 06

**GROUND TECHNOLOGY**

Grey Scale

Colour Check/Reference

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BH131 9.00 m to 10.50 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507928.78 N299694.12
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH132</b>	Hole Type RC	Level 25.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.10	D	N=18 (3,6/5,4,4,5)				(25.39)	Brown slightly clayey gravelly SAND with few fine rootlets. Sand is fine and medium. Gravel is angular and subangular fine and medium yellowish brown oolitic limestone.	
		0.00 - 0.10	ES					0.10		
		0.10 - 0.20	D					(25.29)		
		0.20 - 0.60	B							
		0.60 - 0.70	ES	N=46 (6,8/10,10,12,14)	100	0	0	0.70	Yellowish brown slightly clayey sandy GRAVEL. Sand is fine and medium. Gravel is angular and subangular fine to coarse very weak and weak oolitic limestone. Occasional pockets (<50 mm) of soft to firm greyish brown clay.	
		0.70 - 0.80	D					(24.69)		
		0.80 - 1.20	B							
		1.20 - 1.65	D	N=46 (6,8/10,10,12,14)	100	0	0	1.20	Firm to stiff brownish grey gravelly CLAY. Gravel is angular medium and coarse weak yellowish brown to grey oolitic limestone.	
		1.20	SPT					(24.19)		
		1.90 - 2.00	D	N=46 (6,8/10,10,12,14)	100	0	0	1.50	Medium strong to strong light yellowish brown oolitic LIMESTONE. Fractures possibly very closely spaced, randomly orientated, open infilled with yellowish brown to grey sandy clay. Recovered as angular and subangular fragments (15 mm - 120 mm). (Moderately to slightly weathered Grade III to Grade II)	
		2.00	SPT					(23.89)		
		2.40 - 2.50	CS							
3.00 - 3.22	D	N=15 (3,3/3,4,4,4)	90	26	0	3.00	AZCL			
3.00	SPT					(22.39)				
3.54 - 3.67	CS	N=15 (3,3/3,4,4,4)	90	26	0	3.35	Strong light grey to yellowish brown fine grained LIMESTONE with occasional voids (up to 15 mm). Fractures are 15 - 25 degrees, closely spaced (60/-130), probably open with sandy clay veneer, undulating rough, slightly greyish-brown stained. (Slightly weathered Grade II)			
3.90 - 4.00	D					(22.04)				
4.00 - 4.45	D									
4.00 - 4.45	D	N=15 (3,3/3,4,4,4)	30			3.80	3.35 m to 3.42 m recovered as angular and subangular fragments (<80 mm)			
4.00	SPT					(21.59)				
5.00 - 5.45	D	N=15 (3,3/3,4,4,4)	30			4.00	Stiff grey mottled yellowish brown and orangish brown slightly gravelly CLAY with occasional partings of orange fine sand. Gravel is subangular fine and medium oolitic limestone and subrounded ferruginous nodules. Minimal recovery. Core loss presumed to be more weathered/weaker material. Recovered core is stiff grey mottled yellowish brown and orangish brown slightly gravelly CLAY with occasional partings of orange fine sand. Gravel is subangular fine and medium oolitic limestone and subrounded ferruginous nodules.			
	SPT					(21.39)				

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
2.00	200	2.00	200					1.20	2.00	Water		100	100
								2.00	3.00	Water		100	100
								3.00	4.00	Water		90	90
								4.00	5.00	Water			

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 10.00 m bgl with gravel and from 10.00 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507928.78 N299694.12
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH132</b>	Hole Type RC	Level 25.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.00	SPT	N=16 (2,3/3,4,4,5)				(20.39)	Medium dense light yellowish brown clayey silty gravelly SAND. Sand is fine and medium.	
		5.25 - 5.40	D		100				5.80 m to 6.00 m sand is fine to coarse (coarse fraction is mainly oolites), with rare subrounded medium limestone gravel	
		6.35 - 6.45	D					6.30 (19.09)	6.15 m to 6.30 m indistinctly interlaminated to very thinly interbedded (10 to 15 degrees) with grey silt clay and dark brown lignite	
		6.50 - 6.95	D					6.50 (18.89)	6.25 m to 6.30 m mottled grey brown and orangish to brown	
		6.50	SPT	N=18 (2,3/3,4,5,6)					Grey clayey SILT. AZCL	
		6.90 - 7.00	D		93			6.80 (18.59) 6.95 (18.44)	6.50 m to 6.95 m SPT sample comprises light grey silt with pockets (< 20 mm) of grey silty clay Grey clayey SILT.	
		7.35 - 7.50	D						Stiff grey locally laminated CLAY with frequent partings and lenses of light grey silt and fine sand.	
		7.80 - 7.95	D					7.70 (17.69)	Very stiff grey silty locally slightly sandy slightly silty CLAY. Sand is fine and medium.	
		8.00 - 8.45	D						8.25 m to 8.60 m slightly gravelly	
		8.00	SPT	N=19 (2,3/4,4,5,6)						
		8.50 - 8.60	D							
		8.80 - 8.90	D		87	9	0	8.70 (16.69)	Stiff brownish grey slightly sandy CLAY. Sand is fine.	
		9.20 - 9.35	CS					9.15 (16.24)	9.05 m to 9.15 m soft to firm orangish brown very gravelly. Gravel is angular and subangular fine and medium limestone and ferruginous nodules	
		9.50 - 9.95	D						Medium strong to strong light grey stained orangish brown fine grained LIMESTONE with occasional bivalve shells and shell fragments (5 - 30 mm). Probably fractureless. (Slightly weathered Grade II)	
		9.50	SPT	N=23 (2,17/7,7,5,4)				9.65 (15.74)	9.50 m to 9.65 m recovered as angular fragments (<80 mm)	
									Stiff grey indistinctly laminated locally fissured CLAY. Fissures are planar, smooth, possibly very closely to closely spaced where present.	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								5.00	6.50	polymer		100	100
								6.50	8.00	polymer		90	90
								8.00	9.50	polymer		50	50

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 10.00 m bgl with gravel and from 10.00 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507928.78 N299694.12
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH132</b>	Hole Type RC	Level 25.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.30 - 10.60	CS	N=19 (3,3/4,4,5,6)	100	10	0			Stiff grey indistinctly laminated locally fissured CLAY. Fissures are planar, smooth, possibly very closely to closely spaced where present.	
		11.00 - 11.45 11.00	D SPT							11	10.90 m to 11.00 m pocket (<70 mm) of soft light brown slightly sandy clay with frequent ferruginous nodules (<10 mm). Sand is fine to coarse
		12.00 - 12.20	CS			100					11.60 (13.79)
		12.50 - 12.95 12.50	D SPT	N=23 (2,3/4,5,6,8)						12	Very stiff indistinctly laminated locally fissured CLAY, locally tending to extremely weak mudstone, with rare subrounded light brownish-grey siltstone nodules (<20 mm) and scattered shell fragments (<5 mm). Fissures are planar, smooth, probably very closely to closely spaced where present.
		13.66 - 13.87	CS		100					13	11.60 m to 11.65 locally extremely weak mudstone
	14.00 - 14.45 14.00	D SPT	N=40 (4,5/7,8,12,13)						14	13.80 m to 14.00 m occasional scattered white shells and shell fragments (<20 mm)	
					100				15		

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.50	11.00	Water		0	0
								11.00	12.50	Water		60	60
								12.50	14.00	polymer		80	80

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 10.00 m bgl with gravel and from 10.00 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 14/02/2022 - 16/02/2022
Location:		Contractor: Sweco	Co-ords: E507928.78 N299694.12
Project No. : GT0386		Crew Name: AE / LW	Drilling Equipment: Fraste

Borehole Number <b>BH132</b>	Hole Type RC	Level 25.39m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		15.50 - 15.95 15.50	D SPT	N=39 (4,4/5,8,12,14)						<p>Very stiff indistinctly laminated locally fissured CLAY, locally tending to extremely weak mudstone, with rare subrounded light brownish-grey siltstone nodules (&lt;20 mm) and scattered shell fragments (&lt;5 mm). Fissures are planar, smooth, probably very closely to closely spaced <u>where present.</u></p> <p>15.10 m to 15.20 m thin bed of subangular to subrounded nodules (&lt;80 mm) of strong heavily pyritised dark grey mudstone</p> <p>16.15 m to 16.20 m subrounded nodule (full core diameter) of very strong to extremely strong slightly calcareous pyritised grey mudstone</p> <p>17.00 m rounded nodule (&lt;30 mm) of light grey calcareous siltstone</p> <p>18.20 m fossil belemnite</p> <p>19.35 m to 19.40 m rounded nodule (full core diameter) of medium strong light grey calcareous mudstone</p>
		17.00 - 17.45 17.00	D SPT	N=39 (3,5/6,8,12,13)						
									20.00	End of Borehole at 20.00m

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.00	15.50	polymer		50	50
								15.50	17.00	polymer		50	50

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 10.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 10.00 m bgl with gravel and from 10.00 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: P2011130 (R9).





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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH132

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 02 / 22</b>
HOLE ID <b>BH132</b>	DEPTH <b>1.20 m - 3.00 m</b>	CORE RUN <b>01 + 02</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control/Patches

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BH132 1.20 m to 3.00 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 02 / 22</b>
HOLE ID <b>BH132</b>	DEPTH <b>3.00 m - 5.00 m</b>	CORE RUN <b>03 + 04</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control/Patches

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BH132 3.00 m to 5.00 m



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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH132

Project ID: GT0386

PROJECT NO. GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 16 / 02 / 22
HOLE ID BH132	DEPTH 5.00 m - 6.50 m	CORE RUN 05

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Chart

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BH132 5.00 m to 6.50 m

PROJECT NO. GT0386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 16 / 02 / 22
HOLE ID BH132	DEPTH 6.50 m - 8.00 m	CORE RUN 06

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Chart

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BH132 6.50 m to 8.00 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH132

Project ID: GT0386

PROJECT NO <b>GTO386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>16 / 02 / 22</b>
HOLE ID <b>BH132</b>	DEPTH <b>8.00 m - 9.50 m</b>	CORE RUN <b>07</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
<b>GROUND TECHNOLOGY</b>		



BH132 8.00 m to 9.50 m

PROJECT NO <b>GTO386</b>	PROJECT NAME <b>A47 WANSFORD to SUTTON</b>	DATE <b>18 / 02 / 22</b>
HOLE ID <b>BH132</b>	DEPTH <b>9.50 m - 11.00 m</b>	CORE RUN <b>08</b>
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
<b>GROUND TECHNOLOGY</b>		



BH132 9.50 m to 11.00 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH132

Project ID: GT0386



BH132 11.00 m to 12.50 m



BH132 12.50 m to 14.00 m



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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH132

Project ID: GT0386



BH132 14.00 m to 15.50 m



BH132 15.50 m to 17.00 m





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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH132

Project ID: GT0386



BH132 17.00 m to 18.50 m



BH132 18.50 m to 20.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/02/2022 - 01/03/2022
Location:		Contractor: Sweco	Co-ords: E507709.47 N300046.94
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH133</b>	Hole Type RC	Level 17.34m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.10 - 0.20	ES						(17.34)	Grass over dark brown clayey slightly sandy gravelly SILT with common fine rootlets. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone.
		0.10 - 0.30	B						0.30	
		0.25 - 0.30	D						(17.04)	
		0.40 - 0.50	ES							Soft yellowish brown slightly mottled orangish dark brown slightly gravelly slightly sandy slightly clayey SILT. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone and rare flint.
		1.00 - 1.20	B							
		1.15 - 1.20	D							AZCL
		1.20	SPT	N=1 (0,0/1,0,0,0)					(16.14)	
		1.80 - 1.90	D							Thinly interbedded plastic dark brown clayey amorphous PEAT and soft greyish brown slightly organic CLAY.
		2.00	SPT	N=1 (0,1/0,0,1,0)	81					
		2.80 - 2.90	D							AZCL
		3.00	SPT	N=0 (0,1/0,0,0,0)					(15.34)	
		3.90 - 4.00	D							2.55 m to 2.65 m slightly calcareous with occasional shell fragments (<2 mm) 2.65 m to 2.70 m sandy very gravelly. Gravel is angular and subangular fine and medium light brownish grey sandy limestone
		4.00	SPT	N=2 (0,0/1,0,0,1)					2.20	
		4.70 - 5.00	CS							Soft grey CLAY with occasional pseudo fibrous plant remains. 3.00 m to 3.40 m probably AZCL with cavetoin of disturbed very soft peat and clay from overlying strata
		5.00	SPT	N=15 (2,2/3,3,5,4)	80				(15.99)	
										Firm becoming firm/stiff with depth grey CLAY.
									2.70 (14.64)	
										AZCL
									2.20	
										Firm becoming firm/stiff with depth grey CLAY.
									2.70 (14.64)	
										AZCL
									2.20	
										Firm becoming firm/stiff with depth grey CLAY.
									3.85 (13.49)	
										AZCL
									2.20	
										Firm becoming firm/stiff with depth grey CLAY.
									3.85 (13.49)	
										AZCL
									2.20	
										Firm becoming firm/stiff with depth grey CLAY.
									3.85 (13.49)	
										AZCL
									2.20	
										Firm becoming firm/stiff with depth grey CLAY.
									3.85 (13.49)	

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		5.00	121										

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was installed with plain pipe from ground level to 4.00 m bgl and slotted pipe from 4.00 m bgl to 9.00 m bgl. The borehole was backfilled from ground level to 4.00 m bgl with bentonite and from 4.00 m bgl to the base of the hole with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 28/02/2022 - 01/03/2022
Location:		Contractor: Sweco	Co-ords: E507709.47 N300046.94
Project No. : GT0386		Crew Name: MG / DC	Drilling Equipment: Beretta T44

Borehole Number <b>BH133</b>	Hole Type RC	Level 17.34m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 2
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.74 - 6.00	CS							Firm becoming firm/stiff with depth grey CLAY. 5.00 m to 5.20 m possible polished shear surfaces
		6.00	SPT	N=18 (3,5/3,4,5,6)	100					6.00 m to 6.40 m abundant possible polished shear surfaces, undulating striated. Zone of disturbance due to SPT, so unable to determine further detail
		6.74 - 7.00	CS							
		7.00 - 8.50 7.00	C SPT	N=21 (3,4/4,5,6,6)					7.00 (10.34)	AZCL
		7.90 - 8.20	CS		51				7.73 (9.61)	Firm to stiff grey CLAY with rare scattered shell fragments (<15 mm). 7.73 m to 7.90 m shear surfaces inclined 45 degrees to 85 degrees, undulating polished
		8.50 - 10.00 8.50	C SPT	N=28 (4,4/5,7,8,8)					8.50 (8.84)	Very stiff indistinctly laminated (45 degrees) grey CLAY locally extremely weak MUDSTONE with rare scattered shells (<35 mm).
		9.50 - 9.80	CS		100					
									10.00	End of Borehole at 10.00m

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
10.00	121							7.00 8.50	8.50 10.00	Air/Mist Air/Mist	grey grey	90 100	90 100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 10.00 m which was the target depth. The borehole was installed with plain pipe from ground level to 4.00 m bgl and slotted pipe from 4.00 m bgl to 9.00 m bgl. The borehole was backfilled from ground level to 4.00 m bgl with bentonite and from 4.00 m bgl to the base of the hole with gravel. The borehole was finished with a top hat cover secured into place with concrete. SPT Hammer Ref: SIS1.



GROUND TECHNOLOGY  
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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH133

Project ID: GT0386



BH133 1.20 m to 3.00 m



BH133 3.00 m to 5.00 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH133

Project ID: GT0386



BH133 5.00 m to 7.00 m



BH133 7.00 m to 8.50 m



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# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH133

Project ID: GT0386

PROJECT NO GTO386	PROJECT NAME A47 WANSFORD to SUTTON	DATE 07 / 03 / 22
HOLEID BH133	DEPTH 8.50 - 10.00 m	CORE RUN 08 (EOBH)
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH133 8.50 m to 10.00 m



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/04/2022 - 04/04/2022
Location:		Contractor: Sweco	Co-ords: E508229.31 N299704.67
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Beretta T44

Borehole Number <b>BH134</b>	Hole Type RC	Level 20.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 1 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.10	ES					(20.09)	Very stiff dark brown slightly sandy slightly gravelly CLAY with occasional roots and rootlets (<2 mm). Sand is fine to coarse. Gravel is angular and subangular fine to coarse limestone.  Stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular and subangular fine and medium limestone.	
		0.00 - 0.20	ES					0.20		
		0.20 - 1.20	ES					(19.89)		
		0.20 - 1.20	LB							
		0.30 - 0.40	ES							
			1.20 - 2.20	C					1.20 (18.89)	AZCL Firm to stiff grey mottled brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular and subangular fine and medium limestone.
			1.50 - 1.60	D					1.30	
			1.70	SPT	N=13 (3,3/3,3,3,4)	100			1.75 (18.34)	Firm to stiff yellowish brown mottled greyish brown calcareous slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular and subangular fine to coarse limestone.
			1.90 - 2.00	D						
			2.20 - 3.20	C						
			2.20	SPT	N=17 (3,4/4,4,4,5)					
			2.66 - 2.91	CS		100				
		3.20 - 4.20	C							
		3.20	SPT	N=15 (3,4/3,4,4,4)				3.40 (16.69)	Soft to firm yellowish brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subangular fine and medium limestone.	
		3.60 - 3.70	D		100					
		3.90 - 4.50	B					3.85 (16.24)	Orangish brown clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is angular and subangular fine and medium extremely weak to very weak ferruginous sandstone and occasional very angular to rounded fine and medium chert.	
		4.20 - 5.20	C							
		4.20	SPT	N=20 (4,4/4,5,5,6)				4.55 (15.54)	Firm grey becoming dark grey CLAY. 4.55 m to 4.80 m mottled yellowish brown 4.70 m becoming dark grey	
		4.83 - 5.13	CS							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	No return	0	0
								2.20	3.20	Air/Mist	No return	0	0
								3.20	4.20	Air/Mist	No return	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the revised target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 4.50.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 4.50 m bgl with gravel and from 4.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/04/2022 - 04/04/2022
Location:		Contractor: Sweco	Co-ords: E508229.31 N299704.67
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Beretta T44

Borehole Number <b>BH134</b>	Hole Type RC	Level 20.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 2 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.20 - 6.20 5.20	C SPT	N=14 (3,3/3,3,4,4)					5.20 (14.89)	Firm grey becoming dark grey CLAY. <i>5.10 m to 5.20 m black lignitic veining (possible root traces)</i> AZCL
		6.20 - 7.20 6.20	C SPT	N=14 (2,3/2,3,4,5)	100				5.62 (14.47)	Recovery is of firm to stiff yellowish brown mottled grey calcareous slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular and subangular fine and medium limestone. Possibly material pushed down from overlying strata e.g. at 1.75 to 3.4 m? Hence no samples taken. 100 mm at base of run is of angular fragments (<50 mm) of medium strong calcareous siltstone nodules.
		6.80 - 7.10	CS		100				6.20 (13.89)	Firm to stiff indistinctly laminated dark grey CLAY with occasional ordered lithorelics (<10 mm).
		7.20 - 8.20 7.20	C SPT	N=21 (4,4/3,4,6,8)						
		7.80 - 8.10	CS		100					
		8.20 - 9.20 8.20	C SPT	N=27 (4,5/5,6,7,9)						<i>8.15 m possible shear surface, 45 degrees undulating polished</i>
		8.80 - 9.10	CS		100				8.70 (11.39)	Stiff indistinctly laminated dark grey CLAY with occasional scattered shell fragments (<10 mm) and rare ordered lithorelics (<20 mm).
		9.20 - 10.20 9.20	C SPT	N=31 (4,6/6,8,8,9)						
		9.92 - 10.20	CS		100					

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		6.00	121					4.20	5.20	Air/Mist	No return	0	0
								5.20	6.20	Air/Mist	No return	0	0
								6.20	7.20	Air/Mist	grey	100	100
								7.20	8.20	Air/Mist	grey	100	100
								8.20	9.20	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the revised target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 4.50.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 4.50 m bgl with gravel and from 4.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/04/2022 - 04/04/2022
Location:		Contractor: Sweco	Co-ords: E508229.31 N299704.67
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Beretta T44

Borehole Number <b>BH134</b>	Hole Type RC	Level 20.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 3 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.20 - 11.20 10.20	C SPT	N=28 (4,5/5,5,8,10)				[Patterned Box]	11.00 (9.09)	Stiff indistinctly laminated dark grey CLAY with occasional scattered shell fragments (<10 mm) and rare ordered lithorelics (<20 mm).  <u>10.87 m to 10.95 m strong dark grey mudstone nodule with calcite and pyrite veining, recovered as angular fragments (&lt;90 mm)</u> Stiff to very stiff locally laminated dark grey CLAY with occasional scattered shell fragments (<10 mm)	
		10.95 - 11.20	CS		100						
		11.20 - 12.20 11.20	C SPT	N=39 (6,6/6,13,10,10)							
		11.67 - 11.97	CS		100						
		12.00 - 13.50 12.00	C SPT	N=32 (4,5/5,7,9,11)						12	12.00 m to 12.30 m approx. 5 rounded nodules (<60 mm) of strong dark grey calcareous mudstone. Possibly pyritic (dense)
		12.45 - 12.70	CS		100						12.30 m to 12.40 m possible shear surface, 45 degrees impersistent polished undulating
		13.50 - 14.00 13.50	C SPT	N=38 (5,6/6,8,12,12)							13.50 m to 13.70 m locally laminated, orientated approx 50 degrees
		14.00 - 15.50  14.40 - 14.64	C  CS							14.00 (6.09)	Very stiff locally laminated dark grey CLAY to extremely weak MUDSTONE with occasional calcareous mudstone nodules, and scattered whole bivalve shells (<30 mm) and shell fragments.

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.20	10.20	Air/Mist	grey	100	100
								10.20	11.20	Air/Mist	grey	100	100
								11.20	12.20	Air/Mist	grey	100	100
								12.00	13.50	Air/Mist	grey	100	100
								13.50	14.00	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the revised target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 4.50.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 4.50 m bgl with gravel and from 4.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 01/04/2022 - 04/04/2022
Location:		Contractor: Sweco	Co-ords: E508229.31 N299704.67
Project No. : GT0386		Crew Name: JC / DL	Drilling Equipment: Beretta T44

Borehole Number <b>BH134</b>	Hole Type RC	Level 20.09m AOD	Logged By CG / MWD	Scale 1:25	Page Number Sheet 4 of 4
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
										Very stiff locally laminated dark grey CLAY to extremely weak MUDSTONE with occasional calcareous mudstone nodules, and scattered whole bivalve shells (<30 mm) and shell fragments.	
									15.50 (4.59)	AZCL	
									15.60 (4.49)	Very stiff locally laminated dark grey CLAY to extremely weak MUDSTONE with occasional calcareous mudstone nodules, and scattered whole bivalve shells (<30 mm) and shell fragments.	
		16.64 - 16.89	CS							<i>16.00 m to 17.00 m occasional rounded nodules (&lt;70 mm) of strong dark grey calcareous mudstone</i>	16
									17.00 (3.09)	AZCL	17
									17.42 (2.67)	Very stiff locally laminated dark grey CLAY to extremely weak MUDSTONE with occasional scattered whole bivalve shells (<20 mm) and shell fragments.	
		18.09 - 18.38	CS								18
									18.50 (1.59)	AZCL	19
		19.70 - 19.90	D								
									20.00	End of Borehole at 20.00m	20

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
15.50	121							14.00	15.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 20.00 m which was the revised target depth. The borehole was installed from ground level to 1.00 m bgl with plain pipe and from 1.00 m bgl to 4.50.00 m bgl with slotted pipe. The hole was backfilled from ground level to 1.00 m bgl with bentonite, from 1.00 m bgl to 4.50 m bgl with gravel and from 4.50 m bgl to the base of the borehole with bentonite. The borehole was finished with a top hat cover secured in place with concrete. SPT Hammer Ref: SIS1.





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH134

Project ID: GT0386



BH134 1.20 m to 3.20 m



BH134 3.20 m to 5.20 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH134

Project ID: GT0386



BH134 5.20 m to 7.20 m



BH134 7.20 m to 9.20 m





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# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH134

Project ID: GT0386



BH134 9.20 m to 11.20 m



BH134 11.20 m to 12.00 m





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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH134

Project ID: GT0386



BH134 13.00 m to 14.00 m



BH134 14.00 m to 15.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton Dualling Supplementary GI

BH134

Project ID: GT0386



BH134 15.50 m to 17.00 m



BH134 17.00 m to 18.50 m





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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH134

Project ID: GT0386



BH134 18.50 m to 20.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/05/2022 - 19/05/2022
Location:		Contractor: Sweco	Co-ords: E508631.82 N299647.21
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH135</b>	Hole Type RC	Level 14.43m AOD	Logged By MM	Scale 1:25	Page Number Sheet 1 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		0.00 - 0.10 0.00 - 0.20 0.00 - 0.30	ES D B						(14.43)	Light brown and grey slightly gravelly SAND with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse flint.
		0.40 - 0.50 0.40 - 0.60 0.40 - 0.60	ES B D						0.35 (14.08)	Orangish brown very gravelly SAND with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse limestone, flint and coal. Cobbles are subangular limestone. <i>0.45 m to 0.50 m band of coal</i>
		1.20 - 1.40 1.20 - 2.20 1.20 1.40 - 1.50	B C SPT D	N=15 (0,0/2,3,5,5)						<i>1.20 m to 1.30 m band of subangular fine coal fragments</i>
		2.20 - 2.65 2.20	C SPT	N=33 (2,3/7,9,9,8)	100				1.80 (12.63) 2.00 (12.43)	Soft light brown and yellowish brown CLAY. Firm to stiff indistinctly laminated dark grey CLAY with nodules of light grey cemented silt (20 mm x 10 mm).
		2.87 - 3.20	CS						2.63 (11.80)	Stiff indistinctly laminated dark grey mottled light brown and orangish brown slightly silty CLAY with occasional bands of light grey silt (5 mm x 5 mm).
		3.20 - 3.65 3.20 3.35 - 3.63	C SPT CS	N=19 (4,4/3,4,4,8)	75				3.20 (11.23)	Stiff to very stiff indistinctly laminated greyish brown and orangish brown mottled greenish grey and black slightly silty CLAY with occasional black carbonaceous fragments (< 5 mm).
		4.20 - 4.65 4.20	C SPT	64 (3,13/64 for 225mm)					4.00 (10.43) 4.20 (10.23)	Soft orangish brown mottled black slightly silty CLAY with frequent bands of black organic material (<3 mm). <i>AZCI</i> <i>4.20 m to 4.47 m collapsed material from shallower depth</i>
		4.50 - 4.95 4.50	C SPT	N=38 (3,4/9,9,10,10)					4.47 (9.96) 4.50 (9.93)	Medium strong light yellowish brown LIMESTONE. Recovered as light brown sandy GRAVEL. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone. No recovery

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								1.20	2.20	Air/Mist	No return	100	100
								2.20	2.65	Air/Mist	brown	0	0
								3.20	3.65	Air/Mist	yellow	0	0
								4.20	4.65	Air/Mist	yellow	0	0
								4.50	4.95	Air/Mist	yellow	0	0

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.50 m, 0.50 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/05/2022 - 19/05/2022
Location:		Contractor: Sweco	Co-ords: E508631.82 N299647.21
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH135</b>	Hole Type RC	Level 14.43m AOD	Logged By MM	Scale 1:25	Page Number Sheet 2 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
▼					0				5.50 (8.93)	No recovery
	5.50 - 5.95	C	N=37 (5,6/7,8,11,11)							Very stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty CLAY.
	5.50	SPT								
	5.56 - 5.86	CS								
	7.00 - 7.45	C	N=63 (3,6/11,16,17,19)							
7.00	SPT									
7.70 - 7.98	CS									
9.33 - 9.62	CS				93					
10.00 - 10.45	C									

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								5.50	5.95	Air/Mist	yellow	100	100
								7.00	7.45	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.50 m, 0.50 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/05/2022 - 19/05/2022
Location:		Contractor: Sweco	Co-ords: E508631.82 N299647.21
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH135</b>	Hole Type RC	Level 14.43m AOD	Logged By MM	Scale 1:25	Page Number Sheet 3 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.00	SPT	47 (4,9/47 for 225mm)						Very stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty CLAY.	11
		10.85 - 11.15	CS		100						
		11.50 - 13.00	C						11.50 (2.93)	AZCL	12
		12.80 - 12.90	D		65				11.97 (2.46)	Stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY with occasional bands of dark grey fragmented siltstone (< 30 mm x 20 mm). <i>12.50 m to 13.00 m friable clay</i>	
		13.00 - 14.50	C						13.00 (1.43)	AZCL	13
		13.67 - 13.97	CS		80				13.30 (1.13)	Stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY with occasional bands of dark grey fragmented siltstone (< 30 mm x 20 mm).	
		14.50 - 16.00 14.50	C SPT	N=108 (0,19/9,19,30,50)						<i>14.45 m fragment of ammonite showing iridescent nacre (60 mm x 40 mm x 30 mm)</i>	15

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		15.00	121					10.00	10.45	Air/Mist	yellow	100	100
								11.50	13.00	Air/Mist	grey	100	100
								13.00	14.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.50 m, 0.50 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/05/2022 - 19/05/2022
Location:		Contractor: Sweco	Co-ords: E508631.82 N299647.21
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH135</b>	Hole Type RC	Level 14.43m AOD	Logged By MM	Scale 1:25	Page Number Sheet 4 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.20 - 15.50	CS							Stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY with occasional bands of dark grey fragmented siltstone (< 30 mm x 20 mm).	
		16.00 - 17.00	C						16.00 (-1.57)	AZCL	16
		17.00 - 18.00 17.00	C SPT	N=79 (5,11/5,11,22,41)					16.45 (-2.02)	Stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY with occasional bands of dark grey fragmented siltstone (< 30 mm x 20 mm).	17
		17.30 - 17.60	CS								
		18.00 - 19.50	C								18
		19.17 - 19.47	CS								
		19.50 - 21.00 19.50	C SPT	50 (10,23/50 for 75mm)							
		20.00 - 20.30	CS								20

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								14.50	16.00	Air/Mist	grey	100	100
								16.00	17.00	Air/Mist	grey	100	100
								17.00	18.00	Air/Mist	grey	100	100
								18.00	19.50	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.50 m, 0.50 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/05/2022 - 19/05/2022
Location:		Contractor: Sweco	Co-ords: E508631.82 N299647.21
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH135</b>	Hole Type RC	Level 14.43m AOD	Logged By MM	Scale 1:25	Page Number Sheet 5 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		21.00 - 22.50	C	50 (8,24/50 for 150mm)	100				21.00 (-6.57)	AZCL	21
		21.81 - 22.00	CS		40				21.36 (-6.93)	Stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY with occasional bands of dark grey fragmented siltstone (< 30 mm x 20 mm).	
		22.50 - 24.00	C		60				22.00 (-7.57)	AZCL	22
		22.50 - 24.00 22.50	SPT						22.20 (-7.77)	Stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty CLAY.	
		23.20 - 23.50	CS						23.50 (-9.07)	AZCL	
		24.00 - 25.00	C		75				23.90 (-9.47)	Very stiff indistinctly laminated dark grey CLAY.	24
		24.75 - 24.83	D								
		25.00	UT								25

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
25.00	121							19.50	21.00	Air/Mist	grey	100	100
								21.00	22.50	Air/Mist	grey	100	100
								22.50	24.00	Air/Mist	grey	100	100
								24.00	25.00	Air/Mist	grey	100	100

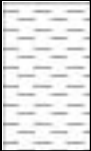
**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.50 m, 0.50 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.

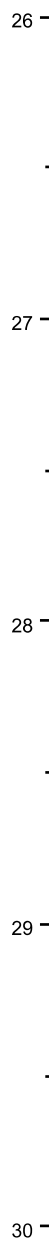


# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 16/05/2022 - 19/05/2022
Location:		Contractor: Sweco	Co-ords: E508631.82 N299647.21
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH135</b>	Hole Type RC	Level 14.43m AOD	Logged By MM	Scale 1:25	Page Number Sheet 6 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		25.00	UT	50 (19,31/50 for 0mm)					25.50	Very stiff indistinctly laminated dark grey CLAY.  End of Borehole at 25.50m
		25.00	UT							
		25.00	UT							
		25.00	UT							
		25.00	SPT							



Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.50 m, 0.50 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386



BH135 1.20 m to 3.20 m



BH135 3.20 m to 4.50 m



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 Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 17 / 05 / 22
HOLE ID BH135	DEPTH 4.50 m - 5.50 m	CORE RUN 5

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH135 4.50 m to 5.50 m

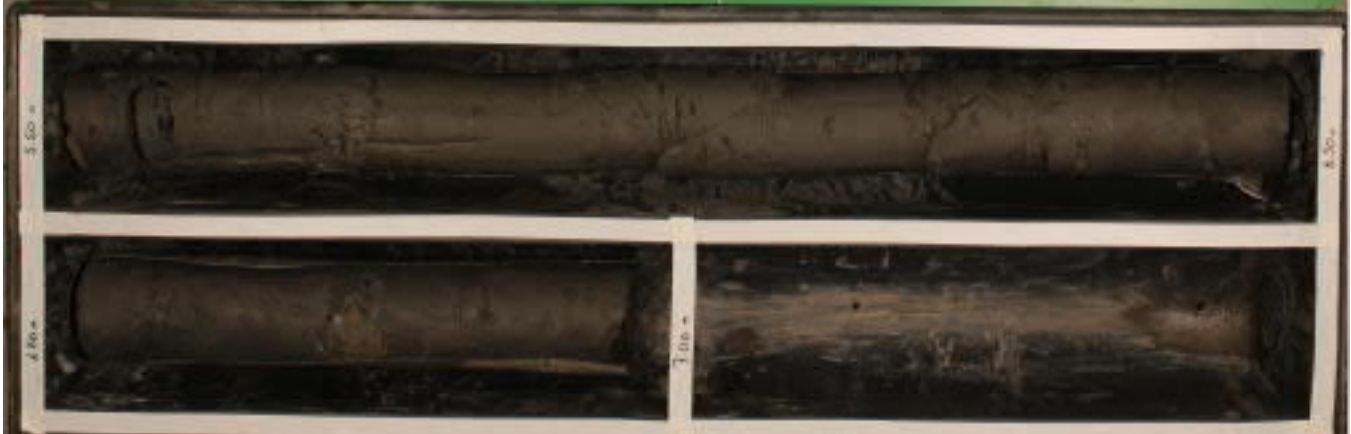
PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 17 / 05 / 22
HOLE ID BH135	DEPTH 5.50 m - 7.00 m	CORE RUN 6

**GROUND TECHNOLOGY**

Grey Scale

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BH135 5.50 m to 7.00 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386







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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 17 / 05 / 22
HOLE ID BH135	DEPTH 10.00 m - 11.50 m	CORE RUN 9

**GROUND TECHNOLOGY**

Grey Scale

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BH135 10.00 m to 11.50 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 18 / 05 / 22
HOLE ID BH135	DEPTH 11.50 m - 13.00 m	CORE RUN 10

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH135 11.50 m to 13.00 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386







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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 18 / 05 / 22
HOLE ID BH135	DEPTH 16.00 m - 18.00 m	CORE RUN 13-14
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH135 16.00 m to 18.00 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 19 / 05 / 22
HOLE ID BH135	DEPTH 18.00 m - 19.50 m	CORE RUN 15
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH135 18.00 m to 19.50 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH135

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 19 / 05 / 22
HOLE ID BH135	DEPTH 19.50 m - 21.00 m	CORE RUN 16

GROUND TECHNOLOGY

Grey Scale

Colour Control Patches

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BH135 19.50 m to 21.00 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 19 / 05 / 22
HOLE ID BH135	DEPTH 21.00 m - 22.50 m	CORE RUN 17

GROUND TECHNOLOGY

Grey Scale

Colour Control Patches

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BH135 21.00 m to 22.50 m



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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH135

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 19 / 05 / 22
HOLE ID BH135	DEPTH 22.50 m - 23.50 m	CORE RUN 18
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH135 22.50 m to 23.50 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 19 / 05 / 22
HOLE ID BH135	DEPTH 23.50 m - 25.00 m	CORE RUN 19
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH135 23.50 m to 25.00 m





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 20/05/2022 - 25/05/2022
Location:		Contractor: Sweco	Co-ords: E508541.90 N299666.11
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH136</b>	Hole Type RC	Level 14.34m AOD	Logged By MM	Scale 1:25	Page Number Sheet 1 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description						
		Depth (m)	Type	Results	TCR	SCR	RQD									
		0.00 - 0.10	ES	N=31 (3,5/5,8,9,9)	80				(14.34)	Light brown gravelly SAND with common fine rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine flint.						
		0.00 - 0.20	D													
		0.00 - 0.30	B													
		0.40 - 0.50	ES						50 (50 for 0mm/50 for 0mm)						0.35 (13.99)	Orangish brown slightly gravelly slightly sandy SILT and CLAY. Sand is fine to coarse. Gravel is subangular fine and medium flint.
		0.40 - 0.60	D													
		0.50 - 0.70	B													
		1.20 - 2.20	C						50 (50 for 0mm/50 for 0mm)						1.20 (13.14)	Stiff brown and yellowish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine limestone.
		1.20	SPT													
		1.50 - 1.60	D													
		1.70 - 2.00	CS						50 (50 for 0mm/50 for 0mm)						1.52 (12.82)	Stiff light brownish grey mottled dark grey CLAY.
		2.05 - 2.20	D													
		2.20 - 3.70	C													
2.20	SPT	50 (50 for 0mm/50 for 0mm)					2.20 (12.14)	Dark orangish brown SAND with pockets of firm dark brown clay (<30 mm). Sand is fine to coarse. Firm light brownish grey mottled dark grey and yellowish brown slightly silty CLAY. 2.40 m to 2.50 m cobble of strong light yellowish brown and reddish brown limestone (90 mm x 60 mm x 45 mm)								
2.30 - 2.40	D															
2.70 (11.64)							100		25	25	Strong light brown and yellowish brown locally mottled black and reddish brown slightly sandy fossiliferous LIMESTONE. Sand is fine to coarse. Occasional voids up to 15 mm.					
3.54 - 3.70	CS	50 (50 for 0mm/50 for 0mm)						3.70 (10.64)	Firm horizontally laminated (up to 30°) dark grey slightly silty CLAY with frequent bands of yellow and orangish brown cemented silt (<10 mm).							
3.70 - 5.20	C															
4.10 - 4.20	D															
4.80 - 5.10	CS	50 (50 for 0mm/50 for 0mm)						4.20 (10.14)	Stiff indistinctly laminated dark grey slightly silty CLAY.							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
		2.20	121					1.20	2.20	Air/Mist	brown yellow	0	0
								2.20	3.70			100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.20 m, 0.20 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 20/05/2022 - 25/05/2022
Location:		Contractor: Sweco	Co-ords: E508541.90 N299666.11
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH136</b>	Hole Type RC	Level 14.34m AOD	Logged By MM	Scale 1:25	Page Number Sheet 2 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		5.20 - 5.65 5.20	C SPT	N=43 (4,9/10,11,11,11)					5.20 (9.14)	Stiff indistinctly laminated dark grey slightly silty CLAY. AZCL
		5.90 - 6.20	CS		80				5.50 (8.84)	Stiff indistinctly laminated dark grey slightly silty CLAY.
		6.70 - 8.20	C						7.72 (6.62)	AZCL
		7.25 - 7.55	CS		90				7.89 (6.45)	Very stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty CLAY.
		8.20	SPT	40 (8,11/40 for 150mm)					8.70 (4.64)	AZCL
		8.70 - 9.70	C						9.94 (4.40)	Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silt slightly fossiliferous CLAY.
		8.90 - 9.20	CS		100					
		9.70 - 11.20	C							

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								3.70	5.20	Air/Mist	yellow	100	100
								5.20	5.65	Air/Mist	yellow	100	100
								6.70	8.20	Air/Mist	yellow	100	100
								8.70	9.70	Air/Mist	yellow	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.20 m, 0.20 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 20/05/2022 - 25/05/2022
Location:		Contractor: Sweco	Co-ords: E508541.90 N299666.11
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH136</b>	Hole Type RC	Level 14.34m AOD	Logged By MM	Scale 1:25	Page Number Sheet 3 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		10.40 - 10.70	CS							Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silt slightly fossiliferous CLAY.	11
		11.20 - 12.70 11.20	C SPT	N=129 (19,18/18,31,39,41)	85						
		11.49 - 11.62	CS						11.49 (2.85) 11.62 (2.72)	Strong light grey LIMESTONE with randomly orientated calcite veins (<15 mm wide). Stiff dark grey slightly silty slightly fossiliferous gravelly CLAY. Gravel is subangular fine and medium limestone.	12
		11.90 - 12.20	CS		100	8	0		11.80 (2.54)	Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silt slightly fossiliferous CLAY.	
		12.70 - 13.70	C						12.70 (1.64)	AZCL	13
		13.70 - 15.20 13.70	C SPT	50 (13,37/50 for 0mm)	80				13.16 (1.18)	Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY.	14
		14.44 - 14.70	CS								15
		14.70 - 15.00	CS								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								9.70	11.20	Air/Mist	yellow	100	100
								11.20	12.70	Air/Mist	yellow	100	100
								12.70	13.70	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.20 m, 0.20 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.



# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 20/05/2022 - 25/05/2022
Location:		Contractor: Sweco	Co-ords: E508541.90 N299666.11
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH136</b>	Hole Type RC	Level 14.34m AOD	Logged By MM	Scale 1:25	Page Number Sheet 4 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		15.20 - 16.70	C							Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY.	16
		16.47 - 16.61	CS	50 (8,19/50 for 150mm)	100				16.20 (-1.86)	Very stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous slightly gravelly CLAY. Gravel is subangular fine and medium limestone.	17
		16.70 - 18.20 16.70	C SPT						16.95 (-2.61)	AZCL	
		17.50 - 17.60	D		90				17.20 (-2.86)	Very stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous slightly gravelly CLAY. Gravel is subangular fine and medium limestone.	18
		18.20 - 18.30 18.20 - 19.70	D C		100				18.20 (-3.86)	Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY.	19
		19.20	SPT	N=46 (0,0/4,12,12,18)							20
		19.45 - 19.70	CS								
		19.70 - 21.20	C								

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								13.70	15.20	Air/Mist	grey	100	100
								15.20	16.70	Air/Mist	grey	100	100
								16.70	18.20	Air/Mist	grey	100	100
								18.20	19.70	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.20 m, 0.20 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.





# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 20/05/2022 - 25/05/2022
Location:		Contractor: Sweco	Co-ords: E508541.90 N299666.11
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH136</b>	Hole Type RC	Level 14.34m AOD	Logged By MM	Scale 1:25	Page Number Sheet 5 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description	
		Depth (m)	Type	Results	TCR	SCR	RQD				
		20.78 - 20.98	CS	50 (10,26/50 for 0mm)	90					Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silty slightly fossiliferous CLAY.	21
		21.70 - 22.20 21.70	C SPT		80						22
		22.00 - 22.20	CS								
		22.20 - 23.70	C								
								22.40 (-8.06)		Very stiff predominantly indistinctly laminated occasionally horizontally laminated (up to 30 degrees ) dark grey slightly silty slightly fossiliferous slightly gravelly CLAY. Gravel is subangular fine and medium limestone.	
								22.80 (-8.46)		Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silty slightly CLAY.	23
		23.30 - 23.51	CS								
		23.70 - 25.20	C								24
		24.42 - 24.64	CS		90						
		25.00	UT								25

Hole Diameter		Casing Diameter		Chiselling			Drilling Flush						
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
								19.70	21.20	Air/Mist	grey	100	100
								21.70	22.20	Air/Mist	grey	100	100
								22.20	23.70	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.20 m, 0.20 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.

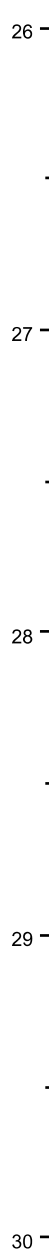


# Deep Borehole Log

Project Name: Wansford to Sutton Dualling Supplementary GI		Client: Galliford Try	Date: 20/05/2022 - 25/05/2022
Location:		Contractor: Sweco	Co-ords: E508541.90 N299666.11
Project No. : GT0386		Crew Name: MG / GC	Drilling Equipment: Beretta T44

Borehole Number <b>BH136</b>	Hole Type RC	Level 14.34m AOD	Logged By MM	Scale 1:25	Page Number Sheet 6 of 6
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Well	Water Strikes	Sample and In Situ Testing			Coring			Legend	Depth (Level)	Stratum Description
		Depth (m)	Type	Results	TCR	SCR	RQD			
		25.00	UT					25.20	Very stiff horizontally laminated (up to +/- 30 degrees ) dark grey slightly silty slightly CLAY.  End of Borehole at 25.20m	
		25.00	UT							
		25.00	UT							
		25.00	UT							
		25.00	UT							



Hole Diameter		Casing Diameter		Chiselling				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top (m)	Depth Base (m)	Flush Type	Flush Colour	Min (%)	Max (%)
25.20	121							23.70	25.20	Air/Mist	grey	100	100

**Remarks**  
 Prior to drilling the position was cleared of services and a hand dug inspection pit to 1.20 m carried out. The borehole was terminated at 25.20 m, 0.20 m deeper than the target depth so that a full final core run could be completed. The borehole was installed with an inclinometer pipe with a grout surround. The install was finished with a tophat cover secured into place with concrete. (Note: UT samples at base of log indicate grout samples taken for testing during inclinometer pipe installation). SPT Hammer Ref: SIS1.



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Tel: 01953 459462

# Photographic Report

Project: Wansford to Sutton  
Supplementary GI

BH136

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 Wansford to Sutton</b>	DATE <b>23 / 05 / 22</b>
HOLE ID <b>BH136</b>	DEPTH <b>1.20 m - 2.20 m</b>	CORE RUN <b>1</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH136 1.20 m to 2.20 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 Wansford to Sutton</b>	DATE <b>24 / 05 / 22</b>
HOLE ID <b>BH136</b>	DEPTH <b>2.20 m - 3.70 m</b>	CORE RUN <b>2</b>
 GROUND TECHNOLOGY	 	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk



BH136 2.20 m to 3.70 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 24 / 05 / 22
HOLE ID BH136	DEPTH 3.70 m - 5.20 m	CORE RUN 3
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m		



BH136 3.70 m to 5.20 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 24 / 05 / 22
HOLE ID BH136	DEPTH 5.20 m - 6.70 m	CORE RUN 4
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m		



BH136 5.20 m to 6.70 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

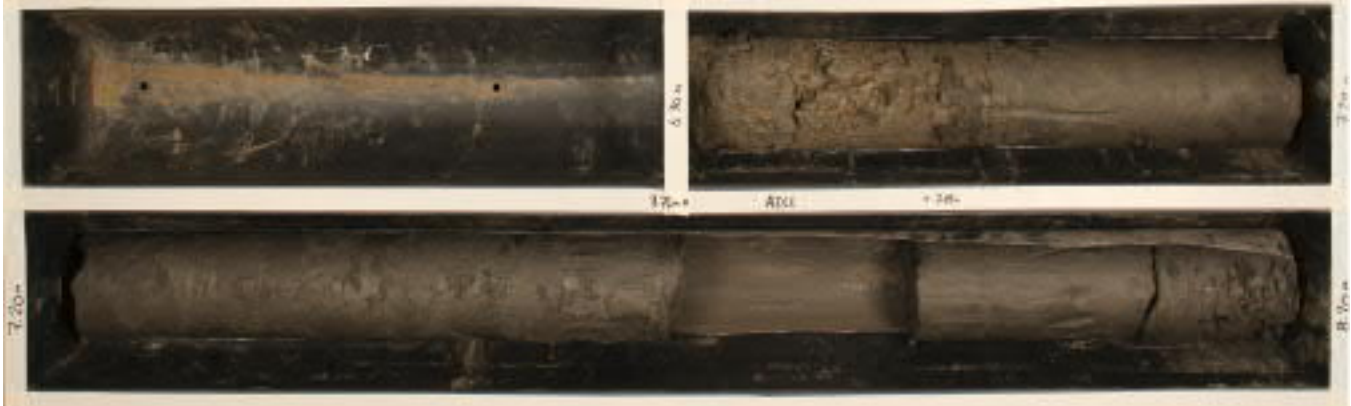
PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 24 / 05 / 22
HOLE ID BH136	DEPTH 6.70 m - 8.20 m	CORE RUN 5

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

**GROUND TECHNOLOGY**  
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BH136 6.70 m to 8.20 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 24 / 05 / 22
HOLE ID BH136	DEPTH 8.20 m - 9.70 m	CORE RUN 6

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

**GROUND TECHNOLOGY**  
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BH136 8.20 m to 9.70 m





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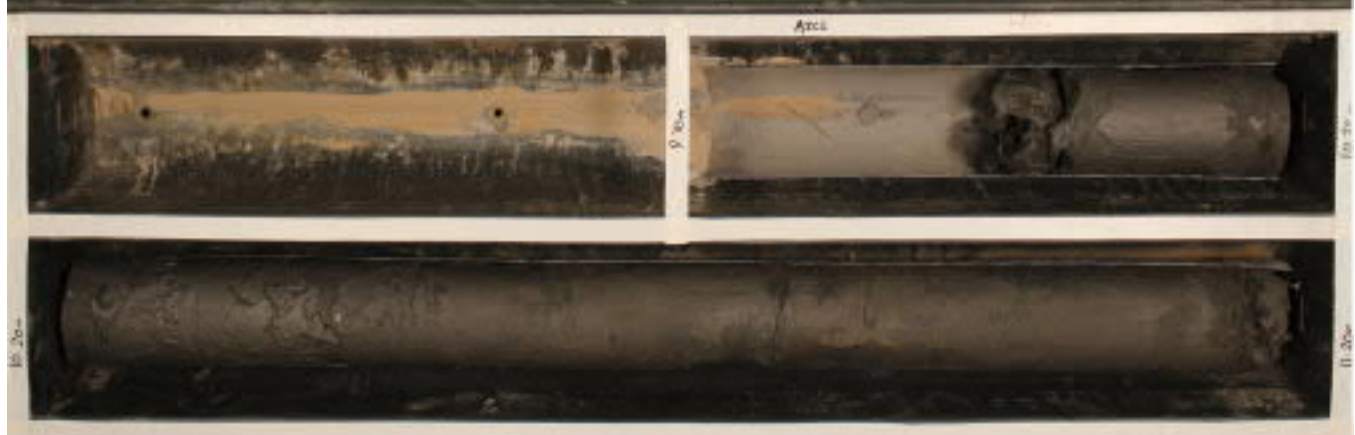
# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 24 / 05 / 22
HOLE ID BH136	DEPTH 9.70 m - 11.20 m	CORE RUN 7
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
GROUND TECHNOLOGY		



BH136 9.370 m to 11.20 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 24 / 05 / 22
HOLE ID BH136	DEPTH 11.20 m - 12.70 m	CORE RUN 8
		<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
GROUND TECHNOLOGY		



BH136 11.20 m to 12.70 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 25 / 05 / 22
HOLE ID BH136	DEPTH 12.70 m - 14.70 m	CORE RUN 9.10

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH136 12.70 m to 14.70 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 25 / 05 / 22
HOLE ID BH136	DEPTH 14.70 m - 16.20 m	CORE RUN 11

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH136 14.70 m to 16.20 m



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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 Wansford to Sutton</b>	DATE <b>25 / 05 / 22</b>
HOLE ID <b>BH136</b>	DEPTH <b>16.20</b> m - <b>18.20</b> m	CORE RUN <b>12+13</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH136 16.20 m to 18.20 m

PROJECT NO <b>GT0386</b>	PROJECT NAME <b>A47 Wansford to Sutton</b>	DATE <b>25 / 05 / 22</b>
HOLE ID <b>BH136</b>	DEPTH <b>18.20</b> m - <b>19.70</b> m	CORE RUN <b>14</b>

**GROUND TECHNOLOGY**

Grey Scale

Colour Control Patches

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BH136 18.20 m to 19.70 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 25 / 05 / 22
HOLE ID BH136	DEPTH 19.70 m - 21.20 m	CORE RUN 15
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.2m 0.4m 0.6m 0.8m 1.0m 1.2m 1.4m 1.6m 1.8m 2.0m		



BH136 19.70 m to 21.20 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 25 / 05 / 22
HOLE ID BH136	DEPTH 21.20 m - 22.20 m	CORE RUN 16
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.2m 0.4m 0.6m 0.8m 1.0m 1.2m 1.4m 1.6m 1.8m 2.0m		



BH136 21.20 m to 22.20 m





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# Photographic Report

Project: Wansford to Sutton  
 Supplementary GI

BH136

Project ID: GT0386

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 25 / 05 / 22
HOLE ID BH136	DEPTH 22.20 m - 23.70 m	CORE RUN 17
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m		



BH136 22.20 m to 23.70 m

PROJECT NO GT0386	PROJECT NAME A47 Wansford to Sutton	DATE 25 / 05 / 22
HOLE ID BH136	DEPTH 23.70 m - 25.20 m	CORE RUN 18
 GROUND TECHNOLOGY	 Grey Scale	<b>GROUND TECHNOLOGY</b> Victory Park   Attleborough Norfolk   NR17 1ZA +44 (0) 1953 459462 mail@groundtechnology.co.uk www.groundtechnology.co.uk
	 Colour Control Patches	
 0.0m 0.1m 0.2m 0.3m 0.4m 0.5m 0.6m 0.7m 0.8m 0.9m 1.0m		



BH136 23.70 m to 25.20 m



# Trial Pit Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 23/02/2022
Location:	Engineer: Sweco	Co-ords: E507630.51 N299714.38
Project No. : GT0386	Crew Name: JJ / JD	Equipment: JCB 3CX

Location Number <b>TP107</b>	Location Type TP	Level 30.90m AOD	Logged By JJ	Scale 1:25	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES		0.25	30.90		Grass over dark brown slightly sandy clayey gravelly SILT with common fine rootlets. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone and rare fine flint.
		0.10 - 0.25	B			30.65		
		0.20 - 0.25	D					
		0.50 - 0.60	ES		1.40			Orangish brown and light brown slightly silty very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone.
		0.60 - 0.90	B					
		1.00 - 1.05	D				1.30 m there is a high cobble content. Cobbles are subangular limestone (130 mm x 45 mm x 25 mm) End of Trial Pit at 1.40m	



Dimensions		Orientation	Trench Support and Comment			Pumping Data		
Pit Length (m)	Pit Width (m)	Orientation (deg)	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks
2.00	0.40	204	Very good	None				
Weather:								

**Remarks**  
 Prior to digging the position was cleared of services. The pit was scheduled to 4.00 m depth however the pit was terminated at 1.40 m due to hard ground. The pit was back filled with arisings in 300 mm layers in the order it was removed.





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# Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP107

Project ID: GT0386

Trial Pit Photographs



1. Pre condition



2. Pit base





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## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP107

Project ID: GT0386



3. Pit side



4. Topsoil





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## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP107

Project ID: GT0386



5. Natural



6. Post condition

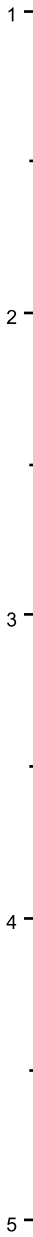


# Trial Pit Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 01/03/2022
Location:	Engineer: Sweco	Co-ords: E507539.27 N299883.38
Project No. : GT0386	Crew Name: JJ / JD	Equipment: JCB 3CX

Location Number <b>TP108</b>	Location Type TP	Level 30.74m AOD	Logged By JJ	Scale 1:25	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES		0.35	30.39		Grass over dark brown slightly sandy clayey gravelly SILT with common fine rootlets. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone and rare fine flint.
		0.10 - 0.20	ES					
		0.10 - 0.35	B		0.90			Brown clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone.
		0.30 - 0.35	D					
		0.40 - 0.50	ES					
		0.50 - 0.80	B		0.90			0.75 m becoming light brown
0.85 - 0.90	D							
							End of Trial Pit at 0.90m	



Dimensions		Orientation		Trench Support and Comment			Pumping Data		
Pit Length (m)	Pit Width (m)	Orientation (deg)	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
1.85	0.25	11	Very good	None					
Weather:									

**Remarks**  
 Prior to digging the position was cleared of services. The pit was scheduled to 4.00 m depth however the pit was terminated at 0.90 m due to hard ground. The pit was back filled with arisings in 300 mm layers in the order it was removed.





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Tel: 01953 459462

# Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP108

Project ID: GT0386

## Trial Pit Photographs



### 1. Pre condition



### 2. Pit base





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Victory Park, Attleborough  
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Tel: 01953 459462

# Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP108

Project ID: GT0386



3. Pit side



4. Topsoil





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Victory Park, Attleborough  
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Tel: 01953 459462

## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP108

Project ID: GT0386



5. Natural



6. Post condition



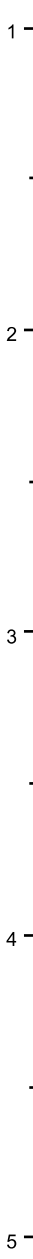


# Trial Pit Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 25/02/2022
Location:	Engineer: Sweco	Co-ords: E507596.82 N299865.60
Project No. : GT0386	Crew Name: JJ / JD	Equipment: JCB 3CX

Location Number <b>TP109</b>	Location Type TP	Level 30.58m AOD	Logged By JJ	Scale 1:25	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES		0.35	30.58		Grass over dark brown slightly sandy clayey gravelly SILT with common fine rootlets. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone and rare fine flint.
		0.10 - 0.30	B					
		0.30 - 0.35	D		1.65	30.23		Orangish brown and light brown clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone. Cobbles are subangular limestones.
		0.40 - 0.50	ES					
		0.60 - 0.65	D					
				1.00 - 1.30	B			
		<p><i>1.40 m medium cobble content and low boulder content. Cobbles are subangular and subrounded limestone (&lt; 75 mm x 40 mm x 15 mm). Boulders are subangular limestone (&lt; 225 mm x 140 mm x 40 mm)</i></p> <p>End of Trial Pit at 1.65m</p>						



Dimensions		Orientation		Trench Support and Comment			Pumping Data		
Pit Length (m)	Pit Width (m)	Orientation (deg)	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
2.00	0.35	103	Good	None					
Weather:									

**Remarks**  
 Prior to digging the position was cleared of services. The pit was scheduled to 4.00 m depth however the pit was terminated at 1.65 m due to hard ground. The pit was back filled with arisings in 300 mm layers in the order it was removed.



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Tel: 01953 459462

# Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP109

Project ID: GT0386

Trial Pit Photographs



1. Precondition



2. Pit base





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Tel: 01953 459462

## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP109

Project ID: GT0386



3. Pit side



4. Topsoil





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Tel: 01953 459462

## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP109

Project ID: GT0386



5. Natural



# Trial Pit Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 25/02/2022
Location:	Engineer: Sweco	Co-ords: E507664.42 N299817.73
Project No. : GT0386	Crew Name: JJ / JD	Equipment: JCB 3CX

Location Number <b>TP110</b>	Location Type TP	Level 31.55m AOD	Logged By JJ	Scale 1:25	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00 - 0.50	B		0.80	31.55		Grass over dark brown gravelly very clayey SAND with common fine rootlets. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone and rare fine flint
		0.10 - 0.20	ES					
		0.20 - 0.50	B					
		0.50 - 0.55	D					
		1.00 - 1.10	ES					
		1.10 - 1.40	B		3.10	30.75		Orangish brown and light brown clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular and subrounded fine to coarse limestone. Cobbles are subangular limestone.  <u>1.30 m high cobble content. Cobbles are angular and subangular limestone (&lt; 90 mm x 50 mm x 20 mm)</u>
		1.95 - 2.00	D					
		2.50 - 2.80	B					
								End of Trial Pit at 3.10m

Dimensions		Orientation		Trench Support and Comment			Pumping Data		
Pit Length (m)	Pit Width (m)	Orientation (deg)	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
2.00	0.35	179	Good	None					
Weather:									

**Remarks**  
 Prior to digging the position was cleared of services. The pit was scheduled to 4.00 m depth however the pit was terminated at 3.10 m due to hard ground. The pit was back filled with arisings in 300 mm layers in the order it was removed.





GROUND TECHNOLOGY  
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Tel: 01953 459462

## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP110

Project ID: GT0386

Trial Pit Photographs



1. Precondition



2. Pit base





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Norfolk, NR17 1ZA  
Tel: 01953 459462

## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP110

Project ID: GT0386



3. Pit side



4. Topsoil





GROUND TECHNOLOGY  
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## Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP110

Project ID: GT0386



5. Natural



6. Post condition



# Trial Pit Log

Project Name: Wansford to Sutton Dualling Supplementary GI	Client: Galliford Try	Date: 15/02/2022
Location:	Engineer: Sweco	Co-ords: E507647.70 N299650.27
Project No. : GT0386	Crew Name: JJ / JD	Equipment: JCB 3CX

Location Number <b>TP111</b>	Location Type TP	Level 27.76m AOD	Logged By JJ	Scale 1:25	Page Number Sheet 1 of 1
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Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.05 - 0.15	ES		0.35	27.76		Grass over dark brown slightly sandy clayey gravelly SILT with frequent rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse limestone and rare flint.		
		0.15 - 0.30	B							
		0.30 - 0.35	D							
				0.70 - 0.80	ES		1.30	26.46		Brown and yellowish brown clayey sandy GRAVEL with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse limestone. Cobbles are subrounded to subangular limestone. <u>0.60 m to 1.50 m some subangular limestone cobbles (70 mm x 50 mm x 20 mm)</u> <u>0.70 m to 1.30 m becoming light yellowish brown and no longer brown</u>
				0.80 - 1.10	B					
				1.50 - 1.80	B					
		1.80 - 1.85	D		1.85			Weak to very weak light yellowish brown and slightly weathered sandy LIMESTONE with rare iron staining. Sand is fine to coarse.		
End of Trial Pit at 1.85m										

Dimensions		Orientation		Trench Support and Comment				Pumping Data		
Pit Length (m)	Pit Width (m)	Orientation (deg)		Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks
4.00	0.30			Unstable	None					
Weather:										

**Remarks**  
 Prior to digging the position was cleared of services. The pit was scheduled to 4.00 m depth however the pit was terminated at 1.85 m due to hard ground. The pit was back filled with arisings in 300 mm layers in the order it was removed.





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Norfolk, NR17 1ZA  
Tel: 01953 459462

# Trial Pit Photographic Report

Project: Wansford to Sutton Dualling  
Supplementary GI

TP111

Project ID: GT0386

## Trial Pit Photographs



1. Pre condition



2. Pit base





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3. Pit side



4. Topsoil





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5. Natural



6. Post condition







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5. TP112 Natural



6. Post condition