A6 to Manchester Airport Relief Road

B007 – Woodford Road Bridge Preliminary Design Report-Draft Report No. 1007/704/087

September 2013







south east manchester multi modal strated

sem



PRELIMINARY DESIGN REPORT

Structure Name :Woodford Road BridgeStructure Number :B007

Report No. 1007/704/087

Report Control Sheet

Version	Date	Status	Prepared By	Checked By	Approved By
P1	05/01/2012	Draft	N Afshar	N Sheena / T Kshirsagar	N Sheena
2	09/05/2012	Draft (Final)	N Afshar	T Kshirsagar	N Sheena
3	24/01/2013	Draft (Final)	M Mfandarahwa	N Sheena	N Sheena
4	04/09/2013	Draft	L Fields	N Sheena	N Sheena
5	13/09/2013	Final	L Fields	N Sheena	N Sheena

Table of Contents

1. Description of Site	. 1
2. Highway Details	. 1
3. Proposed structure	
4. Span arrangements	
5. Bridge Articulation	
6. Headroom and Clearances	
7. Road Restraint system (Bridge Parapets)	. 2
8. Preferred Structural Options	. 2
8.1. Superstructure Options	. 2
8.2 Substructure Options	
9. Geotechnical Information	. 3
9.1 Groundwater	. 3
9.2 Preliminary Geotechnical Assessment	. 3
10. Environmental Impact Considerations	
11. Appearance	
••	

Appendix A: Location Plan Appendix B: Proposed General Arrangement Drawing 3D Model Appendix C: Ground Investigation Information

1. Description of Site

The proposed Woodford Road Bridge is part of the South East Manchester Multi Modal Strategy (SEMMMS) A6 to Manchester Airtport Relief Road scheme (A6MARR), carrying the existing Woodford Road over the A6MARR route. It is located 300m north of the existing Woodford Bridge which crosses the West Coast Main Railway Line.

There are a number of residential and commercial properties in the vicinity of the site and along Woodford Road, North and South of the proposed bridge. The immediate surrounding area is generally open farm land. An aerial location plan at 1:1250 scale with the bridge extents delineated in red is included in Appendix A.

2. Highway Details

Over Structure: Woodford Road, a two lane carriageway with footways either side (3.0m Footway+ 7.3 Carriageway + 1.0m Verge).

Under Structure: Under Structure – A6MARR with a total width of 23.9m.

3. Proposed structure

The proposed structure will be a single span simply supported bridge (Semi Integral construction). The superstructure will be in the form of a composite plate girder steel beam & reinforced concrete slab deck. The bridge superstructure will be supported on full height reinforced concrete (R.C) abutments, which will be founded on bored piles. The square deck width including parapet up stands will be 12.3m. R.C return wing walls on piled foundations are also proposed. A proposed General Arrangement drawing is included in Appendix B.

4. Span arrangements

Single skewed span of 33.7m measured between abutment faces. Skew angle is approximately 47 degrees.

5. Bridge Articulation

The superstructure will be supported on bearings under each plate girder; free at one end and pinned at other end.

6. Headroom and Clearances

The provided headroom is greater than 5.3m. In accordance with TD 27 there is a need to consider impact on the superstructure. The lane width and cycle way width are in accordance with TD 27.

7. Road Restraint system (Bridge Parapets)

Type N2 steel parapet with mesh infill is in accordance with Road Restraints Risk Assessment Process (RRRAP) and with TD 19/06. Working width class to be not greater than W4 and will be decided in the final stage of design. The parapet height is to be 1.0m at both North and South Verges.

8. Preferred Structural Options

8.1. Superstructure Options

Simply supported, semi-integral composite steel plate girder with slab deck. Refer to Drawing number 1007/3D/DF7/A6-MA/B007/707 and the 3D Model:

For span ranges of 30m to 45m, steel plate girder is normally considered a cost effective solution. The advantages and disadvantages of using steel plate girder composite structure are given below;

Advantages:

- With composite structures, lower construction depth will be achievable. Normal depth to span ratio is 1/20 to 1/30 typical.
- Overall, lower weight of superstructure will be achievable. With composite bridge, typically 30-50% reduction of weight is anticipated compared with similar concrete decks.
- Light units for erection will be achievable. As a result, erection will be carried out by smaller cranes.
- Pre-fabrication in factory is possible. Quality control will be undertaken in good condition.
- Even number of girders achieves better optimisation of material and allows bracing in pairs.
- Permanent formwork provides self supporting system during construction and eliminates false-work.
- Reduces site works which is weather dependent.

Disadvantages:

- Maintenance is required against corrosion.
- Delivery times are dependent on specialist supplier.

8.2 Substructure Options

(In-situ concrete wall abutment)

Considering the topography of the site, existing ground level and the feasibility of the work, full height concrete abutment is the best possible option.

Taking the geotechnical information into account, piled foundation would be a suitable foundation solution in order to reduce settlements from the embankment and bridge loading, which could affect the track and track bed. Further discussion regarding the geotechnical assessment is addressed in section 9 of this report.

9. Geotechnical Information

The ground and groundwater conditions for the proposed Woodford Road Bridge have been assessed using relevant geological maps (Stockport Sheet 98, Solid and Drift Scale 1:50,000) and 7 No. exploratory bore holes logs are provided by a number of phases of GI for the area.

9.1 Groundwater

Groundwater was encountered in 7 of the 8 exploratory bore holes, five of which indicated strikes at more than one depth. All but two readings showed a rise in level after 20mins, the two strikes that didn't show a rise where within the Sand bands, all others where within the Clay or at the Clay/Sand horizon. These changes in levels indicate fast flowing water. The overall depths ranged from 1.2mbgl (87.05mAOD) and 9.5mbgl (77.91mAOD).

9.2 Preliminary Geotechnical Assessment

It is anticipated that the maximum allowable bearing pressures for a pad foundation on the firm to stiff CLAY would be 150kPa, with consideration needed for settlement in the soft material at depth (refer to Appendix C for further information).

It is therefore recommended that piled foundation would provide a more suitable foundation solution for the proposed bridge in order to achieve the required loads and settlement tolerance. The length of piles will need to be confirmed by the pile designer.

The potential for chemical attack on buried concrete within the ground has not been assessed. This will be the responsibility of the foundation designer.

Given that groundwater has been identified in almost all of the exploratory bore holes, with some significant changes in level over a short period of time drainage methods will need to be considered in the design. Further investigation into the groundwater levels and changes with seasons, along with flow rates is recommended for the design and drainage methods, along with temporary mitigation measures during construction.

10. Environmental Impact Considerations

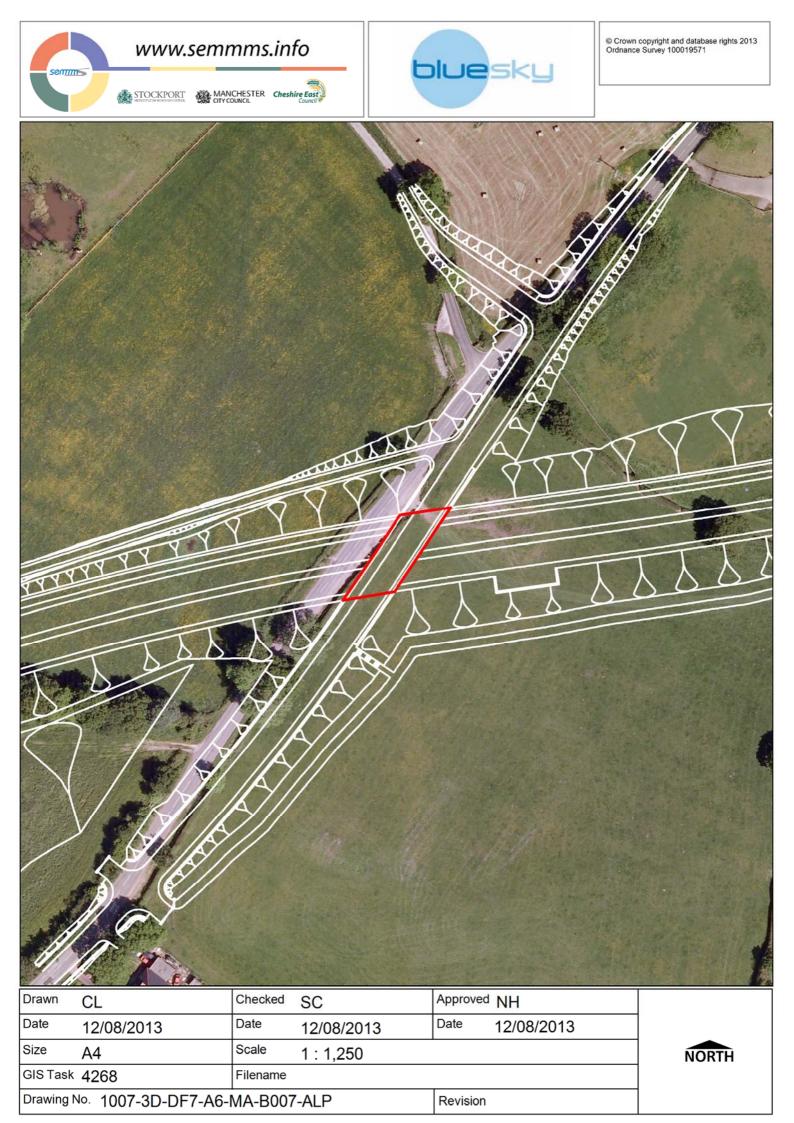
Refer to Volume 1 (Main Text) of the Environmental Statement.

11. Appearance

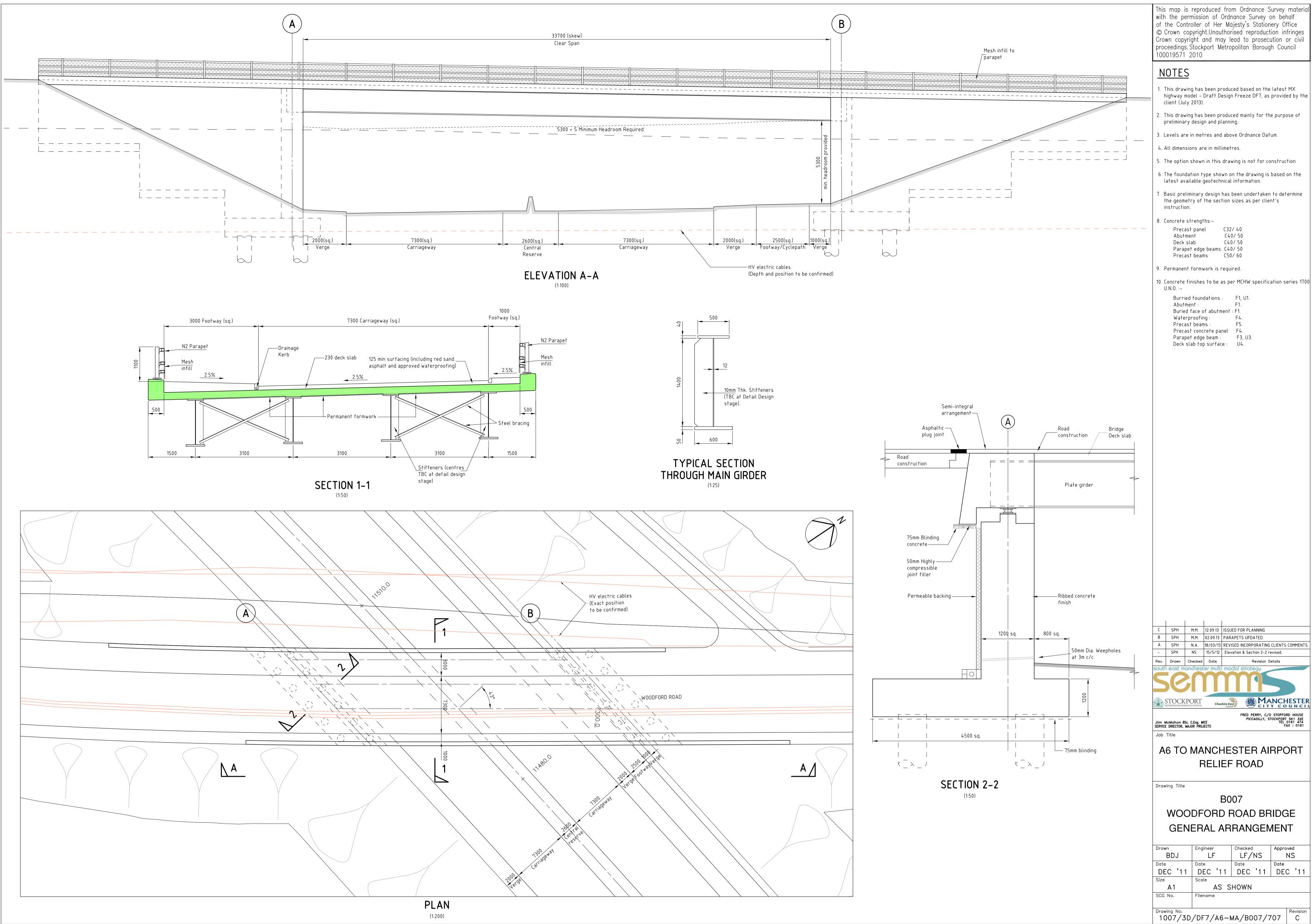
The proposed superstructure will obviously be visible, which on elevation comprises of approximately 1.5m deep steel beams and 0.5m string course spanning across the A6MARR. In addition, N2 steel parapets (post with 3 rails- open structure) will be mounted on the string courses either sides of the bridge (please refer to the 3D view of the bridge in Appendix B). The bridge approaches will be carried on approximately 3.0m embankments. The

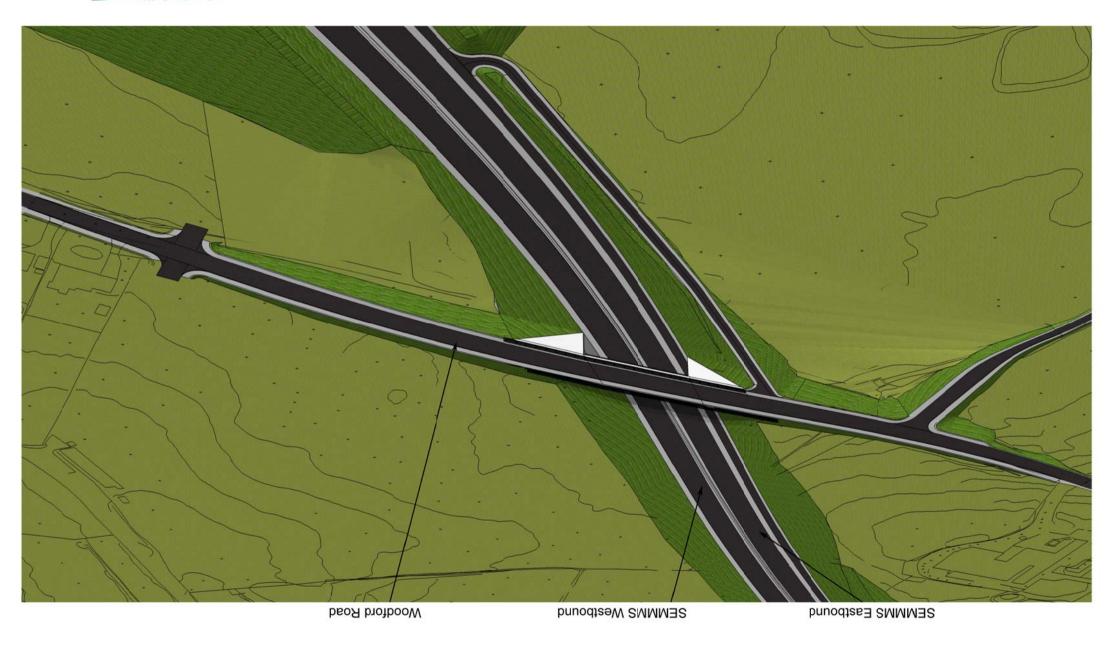
abutment and wing wall facing at the bridge location is going to be of concrete finish.

Appendix A: Location plan



Appendix B: Proposed General Arrangement drawing 3D Model







Woodford Road Bridge Aerial View Appendix C: Reviewed Ground Investigation Information

Scott Wilson

Contractor:	GEOTECH	INICAL ENGINE	EERII	NG L	IMITED			Engineer: Faber Maunsell Ltd	Sheet: 1 of 2
	Samples	& Tests			Water/			Strata	
Depth	Type No	Test Results	TCR SCR RQD	If (mm)	(Flush Return)	O.D. Level	Depth (Thickness)	Description	Legend
0.00 0.00-0.30	D 1 D* 1						F	TOPSOIL: Firm and stiff friable dark brown and grey-brown	
0.30-0.80	B 2 B 3					86.27	0.30	sandy clay with a little subangular to rounded fine and medium gravel of various lithologies and frequent fine	/ xo_ · · <u> </u>
0.50	D4						(0.50)	rootlets. Occasional fine gravel size pockets of orange-brown	
	D* 4					85.77		discolouration. Firm and stiff light grey-brown and orange-brown sandy	x- <u>o</u>
0.80-1.20	D 5						-	locally slightly sandy CLAY with a little fine and medium	
1.00	D 6 D* 6						F	subangular fine and medium predominantly sandstone gravel and occasional fine rootlets.	
1.20-1.65	Ŭ7						(0.90)	Stiff dark brown mottled grey slightly micaceous slightly	
							F	sandy CLAY with a little subrounded and rounded sandstone	x
1.70	D8					84.87	1.70	gravel and occasional fine rootlets. Locally indistinctly structured with much orange-brown staining and occasional	
							F	\thin partings of orange-brown sand.	
2.00-2.452.00	D 9 SPT B 10	N = 13(450mm) 2 3/2 3 4 4					F	Firm brown mottled grey slightly sandy CLAY with a little subangular to rounded fine sandstone gravel and occasional	
	2.10	20,2011					F	fine gravel size pockets of silt and fine sand.	
							-	2.00 - 2.45 With occasional fine fragments of coal and fine silt partings.	
							F		
							F		
3.00-3.45	U 11						F		
							F		
3.50	D 12						E	3.50 - 3.50 Gravel becomes rare. Silt partings become	
							F	frequent.	
							F		
4.00-4.454.00	B 14 SPT	N = 12(450mm) 1 2/3 2 4 3					L		
							(5.30)		<u> </u>
							-		
							F		
E 00 E 4E							F		
5.00-5.45	U 15						F		
							È.		
5.50	D 16						E .	5.50 - 5.50 Becoming locally red-brown and sandy.	
							-		
6 00-6 456 00	D 17 SPT	N = 13(450mm)					-		
0.00-0.450.00	B 18	2 2/3 3 4 3					Ę		
							F		
							F		
							F		
7.00-7.45	U					79.57	7.00	Stiff brown slightly micaceous slightly sandy CLAY:SILT.	
	B 19						F	Sun brown signity micaceous signity sandy CLAT.SILT.	
							F (1.00)		
							(1.00)		
							F		
8.00-8.458.00	B 20 SPT	N = 14(450mm)				78.57	8.00	Stiff indistinctly structured brown locally slightly sandy	xo
		2 2/3 4 3 4					F	CLAY with occasional fine silt partings and medium gravel	
							F	size pockets of orange-brown sand.	
							F		
							F		
9.00-9.45	U 21						F		
							ţ		
9 50	D 22						ţ		- <u>····</u> ··
9.50	22 0						ţ		×
							ţ		×
	1	1	1			I	L		<u> ~- </u>
	Water	Strikes						Method, Equipment and Remarks	1
Strike Casir	ng Post	Post Flow	Rem	arke	EQUI	PMENT:	Light cable pe	ercussive (shell and auger) rig. METHOD: Hand dug inspection pit 0.00-1.20r	n. Cable perc
Depth Dept	h Mins	Depth Flow			instal 13.00	led with	tip at 15.00m	SING: 150mm diam to 17.50m. BACKFILL: On completion, a standpipe piezor , bentonite seal 17.50-15.00m, granular response zone 15.00-13.00m, bento raised cover 0.20-0.00m. REMARKS: Hole advanced by chiselling 17.10-17.5	nite seal



Project: SEM Date: 04-04-2	2005,						90745	.5 N 38432		Ground Level: 86.57 (m)		BH100).)
Contractor:	GEOI	ECH	INICAL ENGIN	IEERI	NG L	IMITED			Engineer: Fab	er Maunsell Ltd		Sheet: 2 of 2	
	Sam	ples	& Tests			Water/				Strata			2
Depth	Ту		Test	TCR	If	(Flush Return)	O.D.	Depth		Description		Legend	Backfill/
-	N D 23		Results N = 19(450mm)	RQD	(mm)		Level	(Thickness)	Stiff indistinctly st	ructured brown locally sli	ahtly sandy		Ba
	B 24		34/5455					-	CLAY with occasio	nal fine silt partings and r	nedium gravel	<u> </u>	
								(5.00)	size pockets of ora	nge-brown sand. (continue	ed)	x - <u>o</u>	
								- (5.00) -					
								-					
11.00-11.45	U 25							-				<u>xo</u>	
11.00 11.10	0 20							-					
												~	
11.50	D 26							-	11.50 - 12.45 With	h frequent medium gravel	size lenses and	×	
								-	pockets of red-bro	wn fine to coarse sand.			
12 00-121/0500	D 27	SPT	N = 13(450mm)					-					
12.00-1212.00	B 28	511	2 2/2 3 4 4										
								-				<u> </u>	
13.00 19.00	D 20	CDT	N - 50(905)				73.57	13.00					
	D 29 D 30	SPT	N = 50(285mm) 7 13/15 35						Very dense red-bro	own silty fine and medium	SAND.	ל—	
13.50	D 31								13.50 - 13.50 Bec	oming fine to coarse graine	ed.	×	
									10.00 200		-	×	
		-						-				ו••	
14.00-14124500	D 32	SPT	N = 50(220mm) 9 16/50						14.00 - 16.00 Loca	ally tending to a weak sand	dstone.		
												×	
14.50-15.00	В 33							(3.00)					
												<u> </u>	
		~~~~						-				×~	
15.00-1513000	D 34	SPT	N = 50(255mm) 7 13/21 29									x ô	
												, <del>0, ×</del> , ,	
												×	
												×0	
							70.57	16.00				- <u>×</u>	
										ly weak red-brown fine to vered as silty sand and coa			
									fragments.	vereu as siny sand and coa	aise graver size		
16.50-1612050	D 35	С	N = 50(85mm)										
			25 /50					(1.50)					
								-					
							69.07	- 17.50					
17.50-17127050	D 36	С	N = 50(155mm) 10 15/50				05.07	- 17.50	End of Borehole				
			10 15/50					-					
								-					
								-					
								-					
								-					
								-					
								-					
								-					
								-					
								-					
								-					
								t					
													_
			Strikes							Equipment and Remark			
Strike Casir Depth Dept		Post /lins	Post Depth Flo	w Ren	arks	(150m	m) 1.20	-17.50m. CAS	ING: 150mm diam to 17	er) rig. METHOD: Hand dug insp 7.50m. BACKFILL: On completio	n, a standpipe piez	zometer (19mm) v	iss wa
						install	ed with	tip at 15.00m	, bentonite seal 17.50-1	5.00m, granular response zone 1. REMARKS: Hole advanced by	15.00-13.00m, ber	ntonite seal	
						13.00- Metho	o.2011, od: CP		raiscu cover 0.20-0.00m	i. TOR AUVAILORD DY	consenting 17.10-1		



Project Date: 0		1992/02-0	04-1992	C	co-ordi	nates: E 3	390766	.3 N 3843	Job No: 37732IS           34.8         Ground Level: 87	7.04 (m) <b>EA</b>	POYNTO	No. DN 8
		GEOTECH							Engineer: Faber Maunsell Ltd		Sheet: 1 of	
		Samples	& Tests			Water/			Strata			
Dep	th	Туре	Test	t	TCR I SCR (m		O.D.	Depth	Description		Legend	Backfill/ Instrumen
		No	Resul	lts	RQD	,,	Level	(Thickness)	TOPSOIL: Dark brown sandy with re			<u> </u>
								- (0.60)				
0.50	0.50	D 53285PT	N = 12(450 1 1/2 2 4 4	)mm)			86.44	0.60				
			1 1/2 2 4 4	4				-	Stiff orange and grey slightly sandy subangular fine and medium gravel	CLAY with some with occasional gle	ying	
0.95		D 5329						-	on fissure surfaces.			
1.20		U 5330						- - (1.55)				
								-				
1.70	1.70	D 533 ISPT	N = 16(450 1 2/3 3 4 6	)mm) 6				-				
. 15		D 5332					84.89	- 2.15			<u> </u>	
2.15 2.40		U 5333						-	Firm to stiff brown silty sandy CLAY subangular fine gravel. At 2.40m: ve	erv stiff. Below 2.90	)m:	
2.40		0 5555						-	with bands of firm silty clay and poo	rly laminated clay.	×	
2.90	2.90	D 5334SPT	N = 23(450)	յաստյ				-			×	¥
2.00	2.00	2 000 211	3 3/5 6 5 2					-			xo	
3.35		D 5335						(2.35)				
3.60		U 5336						-			×	
								-			^ <u></u>	
4.10	4.10	D 5337SPT	N = 17(450	)mm)				-			ל	Ţ
			12/345	5			82.54	- 4.50				
1.55		D 5338						-	Firm red-brown very sandy CLAY wi subrounded fine, medium and coars	th some subangula	r and $xo_{}$	
								-	Subrounded mile, medium and court	e graven ne o.oom.	×	
								-				
5.40	5.40	D 53396PT	N = 17(450	)mm)				-				
			12/3440	6				-				
5.85		D 5340						- (2.80)				
6.00		U 5341						-			× – –	
6.50	6 50	D 5342SPT	N = 18(450)	رسس				-			×	
0.50	0.50	D 55425F1	1 1/3 5 5 5					-			x	
6.95		D 5343						-			×	
7.90		DU 5344					79.74	7.30			 	
7.30		DU 5544						-	medium dense orange-brown fine ar bands of firm brown sandy CLAY. B	ıd medium SAND w elow 8.40m: brown	fine.	
7.65	7.70	D 5345 _{SPT}	N = 22(450 2 4/4 5 6 2	)mm) 7				-	medium and coarse sand.		×	
			2 7/4 30					-			×	
8.15		D 5346						-			×0	
8.40	8.40	B 429 SPT	N = 19(450 1 2/3 4 5 2					-			× · · ·	
	_							-			~~×	
8.90	8.90	D 5347SPT	N = 21(450 1 1/3 5 7 6	)mm) 6				-(3.40)				
								-				
9.50	9.50	B 430 SPT D 5348	N = 21(450 2 3/4 5 5 2	)mm) 7				-			× ~ ~	
			.,					-			×	
			ı				1	L				
			Strikes						Method, Equipment and	Remarks		
Strike Depth	Casir Dept		Post Depth	Flow	Remar	ks Meth	od: CP					
4.10		20	2.80									
	1.50.5		<u> </u>					POLICIA			.1.1.7	
Juic.	1:50 @			,CITLC			TTTA DC	ROUGH CO	DUNCIL Logged By:	Data Che	CACU Dy.	



		1992/02-0	04-1992	Co-o	rdina	tes: E 3	90766	.3 N 3843	34.8	Ground Level: 87.04 (	m) FLA	DOVN	T	AT O
ontrac		CEOTEOT	INICAL ENGL	VIERDI								POYN		
				NCCR	ING L				Engineer: Fat	ber Maunsell Ltd		Sheet	: 2 of	
		Samples Type	& Tests Test	TCF	t TF	Water/ (Flush	O.D.	Depth		Strata				Backfill/ Instrument
Deptl		No	Results	SCF RQI	If (mm)	Return)		(Thickness)		Description	1		gend	Bacl
0.10	10.10	D 53495PT	N = 19(450mm) 2 3/3 5 5 6	)				-	bands of firm brow	ange-brown fine and me wn sandy CLAY. Below 8	dium SAND wi 8.40m: brown	ith ×	-x	
								-	medium and coars	se sand. (continued)		× o	_×	
							76.34	10.70	Soft to firm brown	a sandy CLAY. Poorly fis	sured with bro	⊢ ·		
	11.00	SPT	N = 19(450 mm)					-	sand partings.	Sandy Clari. 1 oonly no	Stred with bre			
	11.00	UT I	N = 19(450mm) 2 3/4 4 5 6	,				-						
.45		D 5350						- (1.40)						
.60		U 5351						-				· 	· ·	
							74.94	- 12.10						
2.10	12.10	B 431 SPT D 5352	N = 14(450mm) 1 2/2 3 4 5	)				-	Medium dense red	1-brown fine, medium a ly SAND. At 12.80m: be	nd coarse sligh	ntly ×	×	
								-	occasional cobbles	s.	coming dense	<u>'</u> × '	-o .	
	12.80	C	N = 28(450mm)					-				· ~ 	-× .	
	12.00	C	N = 28(450mm) 2 5/5 6 8 9	,				-				 		
								-				<u> </u>	x	
	13.40	С	N = 28(450mm) 2 3/5 6 7 10	)				(2.90)				- - 0		
								-				×	- <u>Q</u>	
								-						
								-					- <u>^</u>	
	14.50	С	N = 33(450mm) 3 4/6 7 10 10					-				i oi ×	-× .	
			3 4/6 7 10 10					-					- <u>×</u>	
							72.04	15.00	End of Borehole				· · ·	
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								-						
								L						
		Water	Strikes						Method.	Equipment and Rema	arks	I		
rike epth	Casir Dept	g Post	Post	ow Ren	narks	Metho	od: CP							

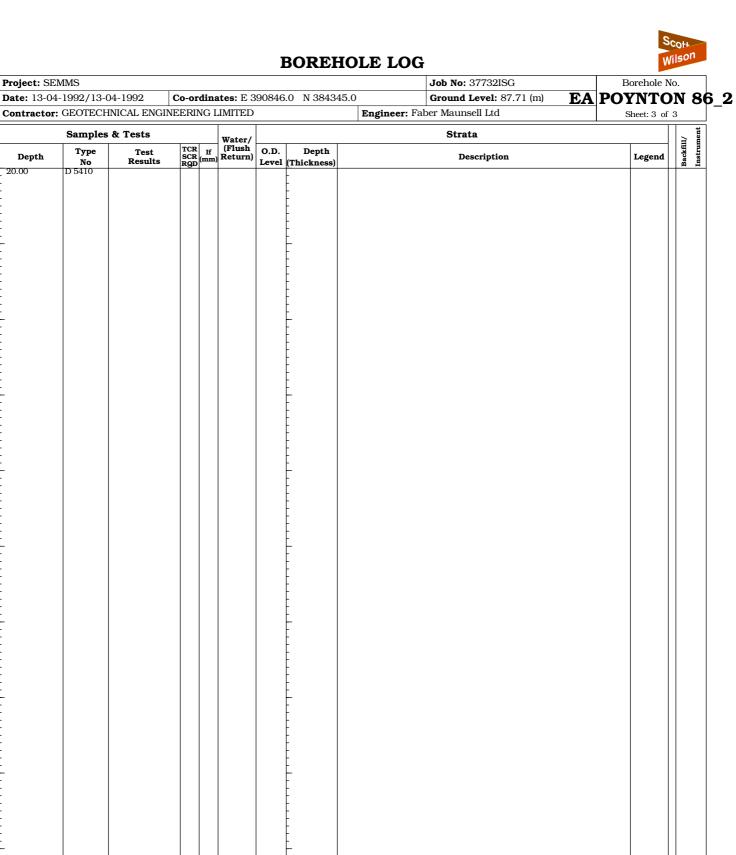
nt: STOCKPORT METROPOLITAN BOROUGH COUNCIL @ A4 S 1:50 

		Samples	& Tests						Strata		'nt
Dept	'n	Туре	Test	TCR	If	Water/ (Flush Return)	O.D.	Depth	Description	Legend	Backfill/ Instrument
Бер	.11	No	Results	RQD	(mm)	Return)		(Thickness)	TOPSOIL: (turfed)		Ba
0.50	0.50	D 5374SPT	N = 10(450mm) 1 2/2 2 3 3				87.46	- 0.25 - - -	Firm orange and grey fissured sandy CLAY. Below 1.70m: firm to stiff orange-brown with some subangular fine and medium gravel. Below 2.40m: stiff. At 2.90m: brown silt, poorly laminated. At 4.60m: firm, laminated. Below 5.30m		
- 1.00 1.20		D 5375 U 5376						- - - -	very sandy. At 7.20m: firm to stiff.		
1.70	1.70		N = 13(450mm)					-			
2.20		D 5378	2 2/3 3 3 4					- - - -		× × 	
2.40		U 5379						-			
2.90	2.90	D 53805PT	N = 19(450mm) 3 3/4 5 5 5					-			
3.40 3.60		D 5381 U 501 U 5382						- - - - -			
4.10	4.10	D 53835PT	N = 19(450mm) 2 3/4 5 5 5								
4.60 4.80		D 5384 U 5385						- (8.65) - - -			
5.30	5.30	D 53865PT	N = 24(450mm) 2 3/7 6 6 5					- - - -			
5.80 6.00		D 5387 U 502 U 5388						- - - - -			
6.50	6.50	D 53895PT W 5390	N = 18(450mm) 1 3/4 4 4 6								7
7.00 7.20		D 5391 U 5392						- - - - - -			-
7.70	7.70	W 539 <b>3</b> 5PT D 5394	N = 23(450mm) 3 5/5 6 6 6					-			2
8.20 8.40		D 5395 U 503 U 5396						- - - - -			
8.90		D 5397 U 5398					78.81	- 8.90 	Stiff red-brown fissured very sandy CLAY with some subrounded fine, medium and coarse gravel.		
9.40	9.40	D 53995PT	N = 67(450mm) 8 14/14 16 17 20				78.01	- (0.80) 	Below 10.00m: medium dense red-brown fine, medium an		
9.90		D 5400						-	coarse SAND.		
		Water	Strikes						Method, Equipment and Remarks		
<b>Strike</b> <b>Depth</b> 7.30 9.70	Casir Dept	1g Post	Post	Ren	arks	Meth	od: CP				
5.10		20	1.10								

Scott Wilson



		Samples	& Tests			Water/			Strata		l/ nent
Dept	h	Туре No	Test Results	T S P	CR If CR (mi	(Flush	O.D.	Depth (Thickness)	Description	Legend	Backfill/ Instrument
0.00	10.00	B 433 SPT		m)				[,	Below 10.00m: medium dense red-brown fine, medium and coarse SAND. (continued)	×0	<u>                                      </u>
								È		×	
0.50	10.60	D 5401 SPT	N = 23(450m 2 3/5 6 6 6	m)				- (2.00)		~~~~	
			20,0000					-		×0	
.10	11.20	D 5402 SPT	N = 19(450m	m)				-			
			1 3/4 5 5 5					Ę		×	
.70		U 504					76.01 75.91	11.70 11.80	Firm brown silty sandy CLAY.	×	
		D 5403 U 5404						-	Firm brown laminated silty CLAY with silt partings.		
2.20	12.20	D 54058PT	N = 17(450m)	m)				- (1.00)			
			2 3/3 4 5 5					Ê			
2.70 2.80	12.80	D 5406 B 434 C	N = 33(450m	m)			74.91	12.80	Dense red-brown fine, medium and coarse SAND and		3
		2 101	45/8889	Í				-	sub-angular coarse GRAVEL. Below 15.20m: very dense.	- <u> </u>	-
								-			
	13.40	С	N = 31(450m 2 4/7 8 8 8	m)				-			
										o o	
	14.00	С	N = 45(450m 5 7/8 11 12	m) 14				 [		<u> </u>	
								F			
	14.60	С	N = 48(450m	m)						0 <u></u> 00 :00	
			6 8/10 11 12	2 15				-			
	15.20	C	N = 57(450m	m)				F			
	10.20	U	6 8/11 14 15					- [ (5.30)			
								-			
	15.80	С	N = 57(450m 5 7/11 14 15	m) 5 17				-			
	16.40	С	N = 0(525mn 50 0/0 0 0 0	n)				-		00	
			,					F			
7.00	17.00	B 435 C	N = 51(450m)					-			
			5 8/8 12 15	16				-		0 <u> </u>	
	17.60	С	N = 66(450m	m)				F			
		Ũ	5 10/12 15 1 21					Ē		· - <del>o</del> - •	
							69.61	18.10	Very dense orange-brown fine and medium SAND.		
3.20 3.30	18.30	D 5407 B 436 SPT	N = 70(450m 10 12/14 16					F			
			22					Ę			
3.80	18.90	D 5408 SPT	N = 49(450m	m)				E		×	
9.00		B 437	5 9/10 12 12	2 15				(1.90)		×o	
9.40	19.50	D 5409	N = 67(450m	m)				Ę		× ~ ~	
	19.00	51	6 8/10 15 18					È		×	
							67.71	20.00	End of Borehole		
		Watar	Strikes						Method, Equipment and Remarks		
rike	Casin Dept	g Post	Post	Flow R	emarl	s Meth	od: CP		Mornou, Equipment and Kemaiks		
2.80	Dept	Mins           20	Deptil	o rise							



JECT INFORMATION/GINT\4,7060785-SEMMS.GPJ | AGS3_NEW.GDT | 22/11/2011 | 10:38/17 F

20.00

1785 - SEMMS\05.0 PROJ											
3C)   K:\4 7060785	Strike Depth	Casing Depth	Water Post Mins	Strikes Post Depth	Flow Remarks	Method: CP	Method	, Equipment and R	emarks		
BH LOG (CP/RC)	Doptin	Dopin	MIIIS	Deptii		-					
Š											
AGS3_NEW.GLB	Scale	1:50 @ A	4 C1	ient: STO	CKPORT METE	OPOLITAN BOROUGH CO		Logged By:	Data Checked By	•	



Contractor:	GEOTECH	INICAL ENGIN	EERII	NG LI	MITED			Engineer: Faber Maunsell Ltd	POYNTO Sheet: 1 of	2
	Samples	& Tests			Wate-/			Strata		/ ent
Donth	Туре	Test	TCR SCR RQD	If ,	Water/ (Flush	O.D.	Depth		Terrad	Backfill/ Instrument
Depth	No	Results	RQD	(mm)	Return)	Level	(Thickness)	Description Turf over TOPSOIL.	Legend	Bac
						87.21	0.20	Firm orange-brown mottled grey silty slightly sandy CL	AY	
0.50 0.50	D 541 ISDT	N = 8(450mm)					-	with fine, medium and coarse subrounded gravel. Below 1.20m: stiff.	w	
0.50 0.50	D 541 5F1	12/22222					-	1.20m. stm.	× ×	
							- _(1.50)		<u>x                                    </u>	
1.00 1.20	D 5412 U 5413						-			
1.20	0.0410						-			
1 70 1 70	DEALACIT	N = 17(450)				85.71	1.70			
1.70 1.70	D 54145P1	N = 17(450mm) 2 3/3 4 5 5					-	Stiff brown slightly sandy fissured CLAY with occasiona gleying and root traces above 2.90m. A littl fine, mediu	m <u> </u>	
-								and coarse subrounded gravel. Below 4.80m: firm. Belo 6.50m: stiff.		
2.20 2.40	D 5415 U 5416						-			
2.40	0.5410						-			1
2.00 0.00	D 5417 0	N = 00(450 ···· )								¥
_2.90 2.90	1 J J417 C	N = 22(450mm) 3 5/5 5 6 6					-			
0.40									×	
3.40 3.60	D 5418 U 501						-			1
5.00	U 5419									
-	D 5 400000	N - 10(450)					-			
4.10 4.10	D 54205PT	N = 18(450mm) 1 3/4 4 5 5					-			
							- - - (5.80)			
4.60	D 5421 U 5422						- (5.80)		<u> </u>	
4.80	0 5422						-		<u> </u>	
5.30 5.30	D 5423SPT	N = 13(450mm) 1 1/2 3 3 5					-		×	
							-		×	
5.80	D 5424						-			
6.00	U 502 U 5425						-			
							-			
6.50 6.50	D 54265PT	N = 17(450mm) 1 2/2 4 5 6					-		x	
							-		×	
7.00	D 5427						_			2
7.20	U 5428					79.91	- 7.50			¥
						. 0.01	7.00	Firm brown very sandy CLAY with some fine, medium a coarse subangular gravel.	and $\frac{\times}{\times}$	
7.70 7.70	D 54296PT	N = 26(450mm) 4 4/4 6 9 7					-	coarse subangular gravel.		
-										
8.20	D 5430						- (1.40)			
8.40	U 503 U 5431						-		 ×	
						78.51	8.90		x	
8.90	SPT	N = 32(450mm) 6 7/7 9 8 8						Firm to stiff brown slightly sandy CLAY with a little fine medium and coarse subrounded gravel.	e, <u>xo_</u>	
							- (0.60)	guvo.		,
9.40 9.50 9.50	D 5432 B 438 SPT	N = 11(450mm)				77.91	9.50	Medium dense brown fine and medium SAND.	× <u> </u>	<u>.</u>
		1 2/2 3 3 3					-		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
							(0.70)		×]	
					<u> </u>					
Strike Casi		Post Flor	-		Meth	od: CP		Method, Equipment and Remarks		
Depth Dep	th Mins	Depth Flow	w Rem	arks	-					
3.60 9.50	20 20	2.70 7.20								



UIILIA	CLOI:		INICAL ENGIN			1			Sheet: 2 of	1
			& Tests		Water/			Strata		Backfill/ Instrument
Dep	th	Type No	Test Results	TCR If SCR (mm RQD	(Flush Return)	O.D. Level	Depth (Thickness)	Description	Legend	Backfill/ Instrume
10.00 10.60	10.10	D 5433 SPT D 5434	N = 24(450mm) 2 3/5 6 6 7			77.21	- 10.20	Medium dense brown fine and medium SAND. <i>(continued)</i> Soft brown very silty laminated CLAY. 11.30m to 11.80m: slightly sandy with a little fine, medium and coarse subangular gravel. Below 12.00m: firm.		
10.80 11.30	11.30	U 504 U 5435 D 54368PT	N = 17(450mm)				- - - - - - (2.30)			
1.80		D 5437	2 3/3 4 4 6							
2.00	12.50	U 5438 B 439 SPT	N = 105(375mm) 6 10/20 35 50 0			74.91	- - - 12.50	Very dense dark orange-brown fine, medium and coarse very		
3.00	13.10	D 5439 C					- - - - -	gravelly SAND with occasional rounded cobbles. 13.70m: becoming dense occasional medium and coarse bands.		
	13.70	С	5 8/14 19 27 16 N = 33(450mm)				- - - - -			
	14.30		3 5/8 8 8 9 N = 33(450mm)				- (2.90) - -			
	14.90		1 3/6 8 9 10 N = 30(450mm)				- - - - -			
	11.00		2 3/5 7 8 10		-	72.01	- - - 15.40 -	End of Borehole	×	
							- - - - - -			
							- - - - -			
							- - - - -			
							- - - - -			
							- - - -			
							-			
4			Strikes					Method, Equipment and Remarks		
strike Depth	Casir Dept	ng Post h <u>Mins</u>	Post Depth Flow	v Remark	s    ^{Meth}	od: CP				
cale:		A4 C1								

Scott Wilson

Project: SE	MMS							<b>Job No:</b> 37732ISG	Borehole No.	
<b>Date:</b> 07-04		04-1992	Co-or	rdina	ites: E 3	90881	.0 N 3843	90.0 Ground Level: 86.98 (m) EA PO	YNTON	1 86
Contractor	GEOTEC	HNICAL ENGI	NEERI	NG L	IMITED				Sheet: 1 of 2	
	Sample	s & Tests			Water/			Strata		/ aent
Depth	Туре	Test	TCR SCR RQD	If (mm)	(Flush	O.D.	Depth	Description	Legend	Backfill/ Instrument
•	No	Results	RQE	) ()		Level 86.83	(Thickness) - 0.15	-		m H
							-	Soft to firm orange-brown mottled grey-brown sandy CLAY with occasional brown fine and medium sand partings.		
0.50 0.5	0 D 54405P1	N = 7(450mm)					-	with occasional brown line and medium sand particips.		
		1 1/2 2 1 2					-			
1.00	D 5441						(1.55)			
1.00	Dom						-			
							-			
1.70 1.7		N = 11(450mm				85.28	1.70			
1.70 1.7	0 D 54425P1	1 2/2 3 3 3	1)				-	Firm brown sandy CLAY with a little fine and medium subangular gravel. Below 4.80m: stiff to very stiff.	×	
							-	<u> </u>	x	
2.20	D 5443						-		×	
2.40	U 501 U 5444						-		<u> </u>	
							-			
2.90 2.9	0 D 54455P1	N = 17(450 mm) 1 3/4 4 4 5	i)				-		x	
							-			
3.40	U 678						-			
3.60	D 5446 U 5447						-			
							F F		x	
4.10 4.1	0 D 54488P1	N = 14(450mm	ı)				-			
		2 2/2 3 4 5					-			
4.60	D 5449						- (5.60)		×	
4.80	U 5450						-		x	
-							-		×	
5 20 F C	DEAFTON	N - 10(450	,				-			
5.30 5.3	U 545 ISPI	N = 16(450mm 2 3/3 3 5 5	ŋ				-		×	
							- -			
5.80	D 5452						-			
6.00	U 502 U 5453						-			
							-		   ★	
6.50 6.5	0 D 54546P1	N = 23(450mm 2 3/5 5 6 7	ı)				F F			
		20,0007								
7.00	D 5455						-			
7.20	U 5456					79.68	7.30	Vous stiff doub arrange have a state Of AV, and that a		
							-	Very stiff dark orange-brown sandy CLAY with a little fine, medium and coarse subangular gravel.		
7.70 7.7	0 D 54578P1	N = 25(450mm	ı)							
		44/5668					-		<u> </u>	
							- (1.60)			
8.40	U 503						-			
	DU 5458						-			
800 00	0 D 545000	N = 16(450mm	,			78.08	8.90		x - 2	
8.90 8.9	0 D 34395PI	N = 16(450mm 1 3/3 4 4 5	9				⊨_ -	Medium dense grey-brown fine medium and coarse slightly slightly gravelly SAND.	×o	
							-		×	
9.40 9.50 9.5	D 5460 B 440 SPI	N = 20(450mm	ı)				- - - (1.40)		~~×	
		2 3/3 5 5 7					-		~ <u>%</u>	
,							-			
Strike   Cas		r Strikes				1.07		Method, Equipment and Remarks		
Depth Dep		Post Depth Flo	ow Ren	narks		od: CP				

K:\47			Water	Strikes		Method	, Equipment and Remark	s
'RC)	Strike Depth	Casing Depth	Post Mins	Post Depth	Flow Remarks	Method: CP		
L0G (CP/	3.50		20	2.60	medium inflow			
L06	8.90		20	7.20	medium inflow			
/ BH								
SW								
NEW.GLB								
NEW								
SS							1	
AC	Scale:	1:50 @ A	4 <b>Cli</b>	ent: STO	OCKPORT METRO	DPOLITAN BOROUGH COUNCIL	Logged By:	Data Checked By:



ontra	ctor: (	GEOTECH	INICAL EN	NGINE	ERIN	G LI	MITED			Engineer: Fab	ber Maunsell Ltd		Sheet: 2 of	
		Samples	& Tests				Water/				Strata			11/ rent
Dept	th	Type No	Test Resul	t lts	TCR SCR RQD	76	(Flush	O.D. Level	Depth (Thickness)		Description		Legend	Backfill/ Instrument
	10.10		N = 14(450	Omm)	<u>עשיי</u> ) (	1			-	Medium dense gre	ey-brown fine medium and coars ly SAND. (continued)	se slightly	-	<u>H</u>
			2 2/3 3 4 4	4				76.68	-	Firm brown slight	ly sandy CLAY with a little fine,	medium	·	
10.60		D 5461 U 5462						76.18	(0.50) 10.80	and coarse subang	guiai gravel.	_		
							-	18	10.80	Firm to stiff brown silt dustings on lar	n very silty laminated CLAY with minae.	1 occasio	nal	
11.10	11.10	D 5463SPT	N = 21(450 2 3/4 4 6 7	Omm) 7					ţ	aasungs on la				
									- (1.60)					
11.70		U 504 U 5464							- (1.60)					
		5 5404							F					
12.20	12.20	D 54658PT	N = 21(450 3 4/4 5 6 6	)mm) 6				74.58	12.40					7
										medium dense dan silty slightly grave	rk orange-brown fine, medium a elly SAND. At 12.70m: slightly cl g dense, occasional soft gleying s	and coars ayey. At	se xo-	÷
12.70 12.80	12.80	D 5466 B 441 C	N = 25(450 3 4/5 5 7 8	)mm) 8					ţ	Occasional cobble	es. 14.60m to 15.10m: medium a	and coars	ets. $x = 0$ se $x = -\infty$	
			_ 90070	-					Ę	gravelly SAND. At	15.20m: very gravelly occasiona les. 16.40m: gravelly. At 17.00m m: gravelly. At 18.20m: very gra	al	- ·	
	13.40	с							Ęl	gravelly. At 17.60r 19.50m: some cob	m. graveny. At 18.20m: very gra obles.	velly. Ať		
			2 5/6 7 7 8						ŧ I				× ~ ~	
	14.00	с		)mm)					Ę				~~×	
			N = 43(450 3 7/8 10 1	11 14					Ę				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	14.00			),					Ę				- × · · ·	
	14.60	С	N = 56(450 3 8/11 12	نسبي. 15 18					ŧ				~~~ ~	
									⊢				×	
									Ę					
									Ę				-×	
	15.80	С	N = 68(450 1 5/10 15						E I				×	
									(7.60)				×o	
16.40	16.40	B 442 C	N = 90(450 4 8/12 19						ŧ					
									ŧ I				×	
	17.00	с	N = 76(450 3 9/12 18	)mm) 21.25					F				× <del>0                                    </del>	
			10						Ę				×	
									ŧ I				×	
									ŧ I				×0	
	18.20	с	N = 58(450	)mm)					Ę				`	
			3 4/8 11 1	18 2Í					Ę				×	
18.80	18.80	B443 C	N = 64(450	)111111)					F				×~-	
	2.00		1 3/7 12 2						F				- x- 	
									Ę				×	
	19.50	с	N = 79(450 6 8/14 16	)mm) 22 27					ţ				×0	
						_		66.98	20.00				×0 	
							ł			End of Borehole				
Strike	Casin		Strikes				Metho	d. 02		Method,	Equipment and Remarks			
Depth	Casin Dept	h Mins	Depth	Flow Boreho				CP						
12.40		20	12.40	Boreho	ae dan	պ								
				ļ										

<b>BOREHOLE LOG</b>	r
---------------------	---

		1999/30-: GEOTECH	INICAL ENGIN					.9 N 3843		Ground Level: 87.11 (m)	<b>POYNTC</b> Sheet: 1 of	
ut			& Tests							Strata	Sheet, 1 Of	
		Samples	Test	TCR	If	Water/ (Flush	0.D.	Depth				Backfill/ Instrument
Dept	h	No	Results	SCR RQD	(mm)	Return)		(Thickness)		Description	Legend	Bacl
							86.91	0.20	TOPSOIL Stiff orange-brow	n slightly sandy CLAY with some poo	kets of 🗵	
0.50	0 50	D 546700	$N = 10(450mm^{2})$					F	coarse sand. At 1	.70m: with occasional gleving on fiss	sured – ×	
0.50	0.50	040 <i>/</i> SPT	N = 10(450mm) 1 2/2 2 3 3					ŧ	Below 2.90m: firm	nganese staining. At 2.40m: very stiff n to stiff brown silty with some suba	ngular	
0.95		D 5468						Ē	and subrounded some to much gra	fine gravel. Below 6.50m: very sandy	with	
1.20		U 5469						F			×	
20		2 0 100						Ē				
1.70	1 70	D 5470000	N = 19(450mm)					ŧ				
	1.70	2 OTI OF I	3 4/4 4 5 6					Ē				
2.20		D 5471						Ę			<u>∞</u>  — ×	
2.20		U 501						ŧ			×	
		U 5472						Ę				
2.90	2.90	D 5473SPT	N = 25(450mm)					F				
			4 6/6 7 7 5					F				
3.40		D 5474						F				
3.60		U 502						Ę			×	
		U 5475						- _(7.50)			×	
4.10	4.10	D 54768PT	N = 15(450mm)					-(				
			2 3/3 4 4 4					F			<u> </u>	
4.60		D 5477						Ē				
4.80		U 5478						F			— —	
								Ē			x <u> </u>	
5.30	5.30	D 54798PT	N = 20(450mm)					-				
			2 3/3 5 5 7					F				
5.80		D 5480						Ē				
6.00		U 503 U 5481						F				
		5 5 10 1						Ē			×	
6.50	6.50	D 5482SPT	N = 21(450mm) 1 3/5 5 4 7					F				
			10,0011					Ē				
7.00		D 5483						  -			<u> </u>	¥
7.20		U 5484						Ē				
							79.41	7.70			×	
7.70	7.70	B 444 SPT D 5485	N = 22(450mm) 3 3/5 5 5 7				13.41	L 7.70		rown fine, medium and coarse gravel	ly x	Ţ
								F	SAND.			
8.20	8.30	D 5486 SPT						F			~~×	
			23/3566					F			<u> </u>	
8.80		D 5487						È				
	9.00		N = 17(450mm)					(2.70)			× ×	
			12/3356					ŧ			× <u> </u>	
9.50	0.00	D 5488	N - 00(450					Ē			- ×_ ×~	
9.60	9.60	В 445 SPГ	N = 20(450mm) 2 3/4 4 6 6					F			 	
								t				
		Wata-	Strikes						Mathad	Equipment and Remarks		
Strike	Casir	g Post	Post Flor	v Ren	arke	Meth	od: CP		Method,	Equipment and Remarks		
<b>Depth</b> 7.80	Dept	h <u>Mins</u> 20	Depth         FIO           7.00			-						
						11						

Scott Wilson

	t: SEM									Borehole I	
		1999/30-						.9 N 3843			
Contra	ctor:	GEOTECH	INICAL ENGINE	SERI	NG I		1		Engineer: Faber Maunsell Ltd	Sheet: 2 of	
		-	& Tests	-		Water/ (Flush			Strata		Backfill/
Dep	th	Type No	Test Results	TCR SCR RQI	If (mm)	Return)	O.D. Level	Depth (Thickness)	Description	Legend	Backfill/
10.10 10.20	10.20	D 5489	N = 16(450mm)					-	Medium dense brown fine, medium and coarse gravelly SAND. (continued)	×0	
10.20	10.20	D 343051 1	1 3/4 4 4 4				76.71	10.40	Firm brown sandy CLAY.	× 0 1	
10.70		D 5491					76.31	- (0.40) 10.80			
10.80		U 504 U 5492					70.01		Firm to stiff brown laminated very silty CLAY. Below 12.00m: with thin partings of orange silt.		
								-	12.00m. with thin partings of orange sit.		
	11.30	SPT	N = 16(450mm) 2 3/3 4 4 5								
								-			
11.80		D 5493						- (2.20)			
12.00		U 505 U 5494									
								-			
12.50	12.50	D 54956PT	N = 18(450mm) 2 3/3 5 5 5								
							74.11	13.00			
13.00		U 506 D 5496					7	-	Firm to stiff red-brown very sandy stony CLAY.		
		U 5497					73.71	- (0.40) 13.40			2
13.50	13.50	B 446 SPT D 5498	N = 31(450mm) 3 3/8 10 7 6						Dense red-brown fine medium and coarse clayey silty SAND.	×0	¥.
			,				70.11	- (0.60)		× ~ ~	
14.00 14.10		D 5499 U 5500					73.11	14.00	Stiff and very stiff red-brown very sandy CLAY with a little		
11.10									subangular fine and medium gravel with occasional sand bands. Below 15.50m: very stiff. Below 17.00m: with some		
14.60	14 60	D 5501SPT	N = 20(450mm)					-	cobbles and boulders. At 18.00m: with subrounded and rounded cobbles.	· <u>o</u> ·×	
11.00	11.00	DOODIN	3 3/5 5 5 5					-			
15.10		D 5502						-		×	
15.30		U 5503						-		x - 0	
								_		<u> </u>	
15.80	15.80	D 5504SPT	N = 25(450mm)					-			
			44/5668					_			
16.30		D 5505						-			
16.50		U 5506						Ę		×	
16.80	16.80	D 5507 C	N = 0(525mm)					-		xo	
	- 0.00		50 0/0 0 0 0					(6.10)			
								-		<u> </u>	
17.50		U 5508									
								-		×	
18.00	18.00	D 55098PT	N = 50(163mm)					-		× ·	
			12 31/50 0 0 0							<u> </u>	
18.50		D 5510						-			
											Ž.
								-			
19.10		U 5511						-		×	
								-			
19.60	19.60	D 55128PT	N = 97(375mm) 12 14/18 29 50					-			
			0					F			

1090										
<:/470			Water	Strikes			Method,	Equipment and Remark	s	
80	Strike Depth	Casing Depth	Post Mins	Post Depth	Flow Remarks	Method: CP				
BH LOG (CP/	13.50 18.70		20 20	13.50 18.70	No rise No rise					
SW BH										
NEW.GLB										
ß'L	Scale	1:50 @ A	4 <b>Cli</b>	ent: STC	CKPORT METRO	DPOLITAN BOROUGH CO	DUNCIL	Logged By:	Data Checked By	·•

Scale: 1:50 @ A4 Client: STOCKPORT METROPOLITAN BOROUGH COUNCIL

Project: SE	MMS				-		HOLE LOG	Job No: 37732ISG		Der		lilso	
	2-1999/30-1	2-1899	Co-ordina	tes: E 9	90904	9 N 3843	93.1	Ground Level: 87.11 (m)	F۵	POY	ehole N NTC		Q
	r: GEOTECH					0 11 0040		ber Maunsell Ltd	ĽA		et: 3 of	3	Ø
Sintuciol					1		Lugineer, rai			5110		1	t
	Samples			Water/	ļ,		1	Strata				111	i men
Depth	Type No	Test Results	TCR SCR RQD	(Flush Return)	O.D. Level	Depth (Thickness)		Description		L	egend	Backfill/	Instrument
20.10	D 5513				67.01	20.10					<u></u>	+"	
20.10	0010					-	End of Borehole						
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
						-							
		Strikes					Method,	Equipment and Remark	<u></u>				
Strike Cas Depth De	sing Post pth Mins	Post Depth Fl	ow Remarks	Meth	od: CP								
Scale: 1:50		ent: STOCK				DOLIGILO		Logged By:	Data Che	-11 D			

Scott

Contrac	tor:	GEOTECH	INICAL ENGIN	EERI	NG I	IMITED			Engineer: Faber Maunsell Ltd	A POYNTO Sheet: 1 of	
		Samples	& Tests						Strata		
Dept	h	Туре	Test	TCR	If	Water/ (Flush Return)	O.D.	Depth	Description	Legend	Backfill/ Instrument
Бери		No	Results	RQL	(mm)	Recurity		(Thickness)	TOPSOIL: (turfed)		In: Ba
0.50	0.50	D 5514SPT	N = 15(450mm) 2 2/3 3 4 5				87.64	- 0.20 	Soft to firm grey-brown very sandy CLAY with pocket coarse sand. Below 1.20m: firm to stiff orange-brown fissured with gleying and some subangular fine grave 2.40m: very stiff. Below 2.90m: brown. 4.10m to 5.30 poorly laminated.	I. At $\begin{bmatrix} \\ \\ \\ \\ \\ \\ \\ -$	
1.20		U 5515									
1.70	1.70	D 55166PT	N = 19(450mm) 2 3/4 5 5 5					- - - - -			
2.40		U 501 U 5517						- - - -			1
2.80 _2.90	2.90	W 5518 D 55198PT	N = 22(450mm) 1 4/5 5 6 6					- - - - -			Ž
3.60		U 5520						- - - -			l V
4.10	4.10	D 552 ISPT	N = 10(450mm) 1 1/2 2 3 3					- - (8.20) -			
4.80		U 502 U 5522						- - - -			
5.30	5.30	D 5523SPT	N = 16(450mm) 1 2/3 3 5 5					- - - - -			
6.00		U 5524						- - - -			
6.50	6.50	D 55255PT	N = 12(450mm) 2 2/2 3 3 4					- - - - - -			
7.20 7.30		U 503 U 5526 W 5528						- - - -			2
7.70	7.70	D 55278PT	N = 29(450mm) 3 5/6 6 8 9					- - - -			
8.40		U 504					79.44	8.40	Stiff red-brown very sandy CLAY with much subangu subrounded fine, medium and coarse gravel.		
_8.90	8.90	U 55298PT D 5530	N = 39(450mm) 5 7/12 9 9 9					- - - (1.30) -			
9.60		B 447 U 5531					78.14	- - 9.70 -	Medium dense brown fine, medium and coarse SANE		
Strike	Casir	ng Post	Strikes	v Ren	narbo	Metho	od: CP		Method, Equipment and Remarks		
<b>Depth</b> 3.60 9.70	Dept	Mins           20           20           20	Depth         FIO           2.80         7.30								

Scott Wilson



		1992/26-( GEOTECH	03-1992 INICAL ENGI				90952	.0 N 3843	Ground Level: 87.84 (m)         EA           Engineer: Faber Maunsell Ltd	POYNTC		8
mira	CLOF:			אכוניי	ave L					Sheet: 2 of		rt
			s & Tests	тсі	R If	Water/ (Flush	0.0	Donth	Strata		Backfill/	rumen
Dept	th	Type No	Test Results	SCI	(mm)	Return)	O.D. Level	Depth (Thickness)	Description	Legend	Back	Instı
0.10	10.10	B 448 SPT D 5532	N = 19(450mm 2 3/3 5 5 6	)				-	Medium dense brown fine, medium and coarse SAND. (continued)	× <del>0</del>		
			-,					(1.70)		× ~ ×		
	10.70	SPT	N = 21(450mm 1 3/4 5 5 7	)				_ (1.70)		×		
			1 3/4 5 5 7					-		× <del>0</del>		
								-				
.40 .50		D 5533 U 5534					76.44	11.40	Firm red-brown very sandy CLAY.			
		0 5554					76.14	11.70	Soft to firm brown laminated silty CLAY.			
2.00	12.00	D 55356PT	N = 14(450mm	)				-				
			1 2/2 4 4 4					- (0.80)				
					-		75.34	12.50	End of Borehole			
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								-				
								Ł				
		<b></b>										
rike	Casir Dept		Strikes       Post       F1	ow Per	norle	Meth	od: CP		Method, Equipment and Remarks			
epth	Dept	h Mins	Depth Fl	ow Rei	HALKS	-						
	1											

							F	BOREH	HOLE LOG	Wi	Ison
roject									Job No: 37732ISG	Borehole No	
		1992/30-0					91027	.0 N 38440		POYNTO	
ontra	ctor:	GEOTECH	INICAL ENGIN	EERI	NGL	IMITED	i		Engineer: Faber Maunsell Ltd	Sheet: 1 of 2	
		Samples	& Tests			Water/			Strata		II/ ment
Dep	th	Type No	Test Results	TCR SCR RQD	If (mm)	(Flush Return)	O.D. Level	Depth (Thickness)	Description	Legend	Backfill/ Instrument
).50	0.50	B 449 SPT D 5536	N = 3(300mm) 1 0/1 0 1 1				87.95	0.30	TOPSOIL : (turfed) Very loose orange-brown fine and medium SAND, with cl lenses in places.	ay xo- - x- - x- - x- - x- - x-	
	1.10	SPT	N = 4(375mm) 1 0/1 1 1 1					(1.50)			
1.60	1.70	D 5537 SPT	N = 6(450mm) 1 1/1 1 2 2				86.45	- - 1.80 -	Firm to stiff brown very sandy CLAY with a little subrour fine gravel, occasional cobbles. At 3.40m: stiff. At 7.10m:		
2.20		D 5538 U 5539						- - - -	soft. Below 7.60m: stiff red-brown with much fine and medium gravel.		
2.70			N = 14(450mm) 2 2/3 3 3 5					- - - -			
3.20 3.40		D 5541 U 501 U 5542						- - - -			
8.90	3.90	D 55438PT	N = 14(450mm) 1 2/2 4 4 4					-			
1.40 1.60		D 5544 U 679 U 5545						- - - - -			
5.10	5.10	D 55466PT	N = 18(450mm) 2 3/3 5 5 5					- (6.60)			
5.60 5.80		D 5547 U 5548						-			
5.30	6.30	D 55498PT	N = 19(450mm) 1 3/4 4 4 7					-			
6.90 7.10		D 5550 U 5551						- - - - -			
7.60	7.60	D 55528PT	N = 21(450mm) 1 3/4 5 5 7					-			

- 8.10		D 5553				_	79.85	-	8.40		Q
- 8.60 8.80	8.80	W 5554 B 450 SPT D 5555	N = 25(45 2 3/5 6 6	0mm) 8				-		medium dense brown fine, medium and coarse silty SAN	
8.60 8.80 9.30	9.40	D 5556 SPT	N = 22(45 1 3/4 4 6	0mm) 8				-			
F 9.90		D 5557						-			
		Water	Strikes							Method, Equipment and Remarks	
Strike Depth	Casin Dept		Post Depth	Flow Rema	arks	Metho	d: CP				
Strike Depth 1.20 8.60		20 20	1.20 8.60	No rise No rise							
Scale:	1:50 @	A4 C	ient: STO	DCKPORT M	IETRO	DPOLITA	AN BC	ROUG	нсс	UNCIL Logged By: Data Check	ced By:



	MMS 8-1992/30-	03-1992	Co-or	rdina	tes: E 3	91027	.0 N 3844	07.0	Job No: 37732ISG Ground Level: 88.25 (m)	EA	Borehole N POYNTC		8
		HNICAL ENGI	_						per Maunsell Ltd		Sheet: 2 of		
	Sample	s & Tests			Water/				Strata			/1	nent
Depth	Type No	Test Results	TCR	If (mm)	(Flush Return)	O.D. Level	Depth (Thickness)		Description		Legend	Backfill/	Instrument
10.0	0 SPI	N = 21(450mm) 2 3/4 5 5 7	1)				-	medium dense bro (continued)	own fine, medium and coar	rse silty SA	ND. ×		-
	5 5550						(3.90)	(contantacta)			- ×- ×		
0.50 10.6	0 D 5558 SPI	N = 24(450mm 2 4/5 6 6 7	1)				-				×		
		2 1,000.					-				×0		
1.10 11.2	0 D 5559 SPI	N = 28(450mm 1 3/5 7 8 8	ı)				-						
		13/5788					-				~~×		
70 11.8	0 D 5560 SPI	N = 26(450mm 3 4/6 6 7 7	1)				-				X		
		34/6677					-				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
2.30	D 5561					75.95	12.30	End of Borehole					
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
							-						
		a. 11											
rike Cas	ing Post	r Strikes Post Fl	ow Ren	narbo	Meth	od: CP		Method,	Equipment and Remark	15			
epth Dep	oth Mins		Jw Ken	uai KS									