

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
2.15m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.11	ES			0.12		0.12	TOPSOIL - Brown friable silty fine to medium sand with occasional subangular limestone gravel.
0.25	D			0.21		0.33	Loose to medium dense red brown very silty fine to medium sand with occasional limestone gravel.
				0.53		0.86	Dense grey buff mottled cobbles / weak flaggy LIMESTONE.
1.00 1.00	D	UCS = 240		0.79		1.65	Firm to stiff buff orange brown silty CLAY with fine white calcareous gravel. Becoming light grey mottled with sandy partings.
2.00 2.00	D	UCS = 280		0.45		2.10	Medium dense light grey SILT and siltstone lithorelict gravels.
				0.05		2.15	Moderately strong grey LIMESTONE surface.
Trial Pit Complete at 2.15 m							

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Dry.

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.55m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.10	ES			0.14		0.14	TOPSOIL - grey brown silty sand with roots.
				0.26		0.40	Grey LIMESTONE flaggy cobbles with red brown silty sandy clay matrix.
0.50 0.50	D	UCS = 170		0.93		1.33	Firm orange brown friable silty slightly sandy CLAY with some gravel and occasional roots. Becoming light green grey.
1.00		UCS = 200		1.17		1.50	Stiff / medium dense SILT with sandy gravelly weak lithorelicts.
1.40	D			0.05		1.55	Moderately grey detrital LIMESTONE with buff surfaces.
Trial Pit Complete at 1.55 m							

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Dry.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -






Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.82m

Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.10	ES			0.13		0.13	TOPSOIL - topsoil and turf.
0.20	D			0.17		0.30	Firm friable brown silty sandy CLAY with rootlets and occasional limestone gravel.
0.50		UCS = 160		0.45		0.75	Firm light grey orange brown mottled silty CLAY with occasional fine white calcareous gravel and rootlets.
1.70	D			1.05		1.80	Grey flaggy limestone COBBLES initially with red brown silty clay matrix. Becoming yellow brown soft and wet from 1.4m.
				0.02		1.82	LIMESTONE surface.
Trial Pit Complete at 1.82 m							

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Slight seepage from 1.4m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.32m



Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.10	ES	UCS = 200		0.20		0.20	TOPSOIL - grey brown friable silty sands with roots.
0.35 0.35	D			0.75		0.95	Firm red orange brown and light grey mottled silty slightly sandy CLAY with some fine white calcareous gravel and rootlets.
1.20	D			0.35		0.95	Medium dense yellow brown very silty fine to medium SAND.
				0.02		1.30 1.32	Moderately strong LIMESTONE surface. Trial Pit Complete at 1.32 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Slight seepage from 1.1m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.20m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.15	ES			0.20		0.20	TOPSOIL - grey friable silty fine sand with occasional limestone gravel and pottery.
				0.10		0.30	Firm friable red brown silty sandy CLAY.
0.35	D			0.40		0.70	Firm light grey orange brown mottled silty slightly sandy CLAY with occasional fine white calcareous gravel.
				0.35		1.05	Medium dense orange brown and beige silty fine to medium SAND and lithorelict siltstone GRAVEL.
1.00	D			0.15		1.20	Weak to strong light grey SANDSTONE/ LIMESTONE.
							Trial Pit Complete at 1.20 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Slight seepage from 1.15m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m2) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.06m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description	
Depth (m)	Type	Results						
0.10	ES			0.20		0.20	TOPSOIL - grey clayey silty sand with rare brick fragments.	
0.30	D			0.18		0.38	Loose to medium dense brown very silty fine to medium SAND with some limestone gravel.	
				0.68		1.06	Loose to medium dense flaggy cobbles of LIMESTONE with some silty sand matrix. NW-SE joint setts. Becoming stronger at base.	
							1.06	----- Trial Pit Complete at 1.06 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Dry

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -



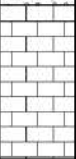
Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.20m

Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description	
Depth (m)	Type	Results						
0.15	ES			0.24		0.24	TOPSOIL - Grey friable silty sand with limestone gravel.	
0.50	D			0.66		0.90	Medium dense buff orange brown fine to medium gravelly SAND, becoming flaggy COBBLES of limestone with some sandy matrix.	
				0.30		1.20	Moderately strong grey LIMESTONE recovered as cobbles.	
							1.20	Trial Pit Complete at 1.20 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Dry

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m2) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.34m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.15	ES	UCS = 240		0.21		0.21	TOPSOIL - Grey brown silty sandy clay with rootelts.
0.30 0.30	D			0.17		0.38	Firm red brown very friable silty sandy CLAY with sandstone gravel.
1.00	D			0.44		0.82	Medium dense grey flaggy LIMESTONE with some red brown sandy matrix.
				0.48		1.30	Medium dense / weak buff very sandy silty GRAVELS and COBBLES of limestone.
				0.04		1.34	Moderately strong LIMESTONE.
							Trial Pit Complete at 1.34 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Seeps at 1.3m.

Project Name: Underpass

NGR: -
Level: -

Date:
18/03/2014

Location: Bicester

Dimensions:
Depth
2.20m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.10	ES			0.20		0.20	TOPSOIL - grey friable silty sand with rootlets.
0.30	D			0.27		0.47	Medium dense brown very silty fine to medium SAND with some limestone gravel.
				0.53		1.00	Weak buff and grey flaggy LIMESTONE cobbles with little sandy matrix. Less matrix and stronger at base.
				0.60		1.60	Firm to stiff light green grey and buff silty slightly sandy CLAY with some fine white calcareous gravel.
1.80	D			0.55		2.15	Medium dense buff orange brown oolitic silty SANDS with limestone gravel. Becoming white and wet.
				0.05		2.20	Moderately strong grey LIMESTONE.
Trial Pit Complete at 2.20 m							

Remarks: 1 inch water pipe breached at 0.4m (no flow)

Pit Stability: Spall in rock rubble.

Groundwater: Seeps at 2.15m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -


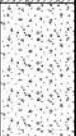
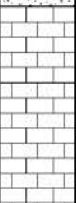
Date:
18/03/2014

Location: Bicester

Dimensions:
Depth
0.85m

Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.10	ES			0.18		0.18	TOPSOIL - grey silty sands with rootlets.
0.35	D			0.27		0.45	Medium dense brown very silty fine to medium SAND with some limestone gravel.
				0.40		0.85	WEak becoming stronger flaggy LIMESTONE.
							----- Trial Pit Complete at 0.85 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Dry

Project Name: Underpass

NGR: -
Level: -


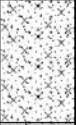
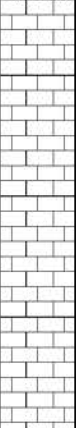


Date:
18/03/2014

Location: Bicester

Dimensions:
Depth
1.95m

Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description	
Depth (m)	Type	Results						
0.10	ES			0.16		0.16	TOPSOIL - grey silty sands with rootlets.	
0.36	D			0.24		0.40	Medium dense brown silty fine medium SAND with some limestone gravel.	
0.71		UCS = 300		0.85		1.25	Grey LIMESTONE initially recovered as flaggy cobbles. Becoming stronger.	
1.30	ES			0.65		1.90	Firm to stiff orange brown and light grey silty slightly sandy CLAY with calcareous gravel.	
1.70	D			0.05		1.95	Strong LIMESTONE surface.	
							Trial Pit Complete at 1.95 m	

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater: Slight seepage at 1.25m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
18/03/2014

Location: Bicester

Dimensions:
Depth
2.35m



Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.42	ES			0.19		0.19	TOPSOIL - grey friable silty sandy clay with rootlets.
1.50 1.50	ES	UCS = 150		1.11		1.30	MADE GROUND - Loose to moderately compact dark grey brown and black sands and gravels of cinders, clinkers, glass bone and pottery. Occasional rubber and slate.
1.90	D			1.00		2.30 2.35	Firm to stiff buff orange brown friable silty slightly sandy CLAY. From 1.95m becoming sandy.
				0.05			Moderately strong LIMESTONE surface. Trial Pit Complete at 2.35 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater:

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
18/03/2014

Location: Bicester

Dimensions:
Depth
1.05m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description	
Depth (m)	Type	Results						
0.10	ES			0.28		0.28	TOPSOIL - grey brown friable silty sands with rootlets.	
0.36 0.36	D	UCS = 200		0.32		0.60	Medium dense red brown SILT and fine SAND with rare limestone gravel.	
				0.45		1.05	Weak becoming moderately strong LIMESTONE. Initially recovered as flaggy cobbles.	
							1.05	Trial Pit Complete at 1.05 m

Remarks:

Pit Stability: Spall in rock rubble.

Groundwater:

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -



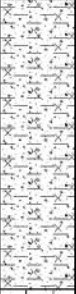
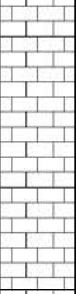

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
2.10m

Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description	
Depth (m)	Type	Results						
0.10	ES			0.22		0.22	TOPSOIL - grey friable silty sand with rootlets.	
0.60	ES			0.60		0.82	MADE GROUND - Loose grey brown silty sandy gravel including limestone, breeze block, terram, wire and timber.	
1.20 1.20	D	UCS = 180		0.58		1.40	Firm to stiff light grey orange brown silty slightly sandy CLAY with some calcareous gravel.	
1.90	D			0.60		2.00	Weak very weathered LIMESTONE recovered as buff mottled sands, gravels and flaggy cobbles. Stronger at base.	
				0.10		2.10	Moderately strong grey LIMESTONE.	
							2.10	Trial Pit Complete at 2.10 m

Remarks:

Pit Stability: Spall in rock.

Groundwater: Strike at 2.0m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -






Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
2.80m

Logged By
CN

Client: A2

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
1.00	ES			0.15		0.15	TOPSOIL - brown silty sands with rootlets.
				0.22		0.15	MADE GROUND - Loose black and brown sands and gravels with clinkers
				0.37		0.37	MADE GROUND - Loose sandy dark grey brown ashy gravels of clinkers and cinders, pottery, shoe inner tube bedstead and carpet. Becoming blacker.
2.40	ES			2.33			
2.80 2.80	D	UCS = 200		0.10		2.70 2.80	Firm to stiff green grey buff silty sandy gravelly CLAY. Trial Pit Complete at 2.80 m

Remarks:

Pit Stability: Slight caving in fills.

Groundwater: Standing at 1.25m.

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.10m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description	
Depth (m)	Type	Results						
0.35	ES			0.30		0.30	TOPSOIL - grey brown silty sand with occasional limestone and roots.	
				0.18		0.48	MADE GROUND - Dark grey silty slightly clayey sand with occasional limestone gravel and topsoil lenses.	
0.80	D			0.52		1.00	Medium dense brown SILT, fine to medium SAND and fine to coarse limestone gravel.	
				0.10		1.10	Moderately strong grey LIMESTONE recovered as flaggy cobbles.	
							1.10	----- Trial Pit Complete at 1.10 m

Remarks:

Pit Stability: Spall in rock rubble

Groundwater: Dry

PPT = Perth Penetration Test 'N' Value , UCS = Unconfined Compressive Strength (kN/m²) by Hand Penetrometer, HV= Hand Vane Result (kPa)

Project Name: Underpass

NGR: -
Level: -

Date:
17/03/2014

Location: Bicester

Dimensions:
Depth
1.98m



Client: A2

Logged By
CN

Samples & In Situ Testing			Level (m AOD)	Thickness	Legend	Depth (m)	Stratum Description
Depth (m)	Type	Results					
0.20	ES			0.35		0.35	TOPSOIL - grey brown silty sands with rootlets.
				0.65		1.00	WEak becoming moderately strong grey LIMESTONE recovered as flaggy cobbles with diminishing brown silty sand matrix.
1.30 1.30	D	UCS = 270		0.44		1.44	Silty sandy CLAY Firm to stiff buff blue grey silty CLAY with fine white calcareous gravel.
				0.46		1.44	Medium dense buff orange brown clayey SILT and fine to medium SAND with limestone gravel.
				0.08		1.90	Moderately strong grey LIMESTONE recovered as flaggy cobbles with buff red brown surfaces.
						1.98	Trial Pit Complete at 1.98 m

Remarks:

Pit Stability: Spall in rock rubble

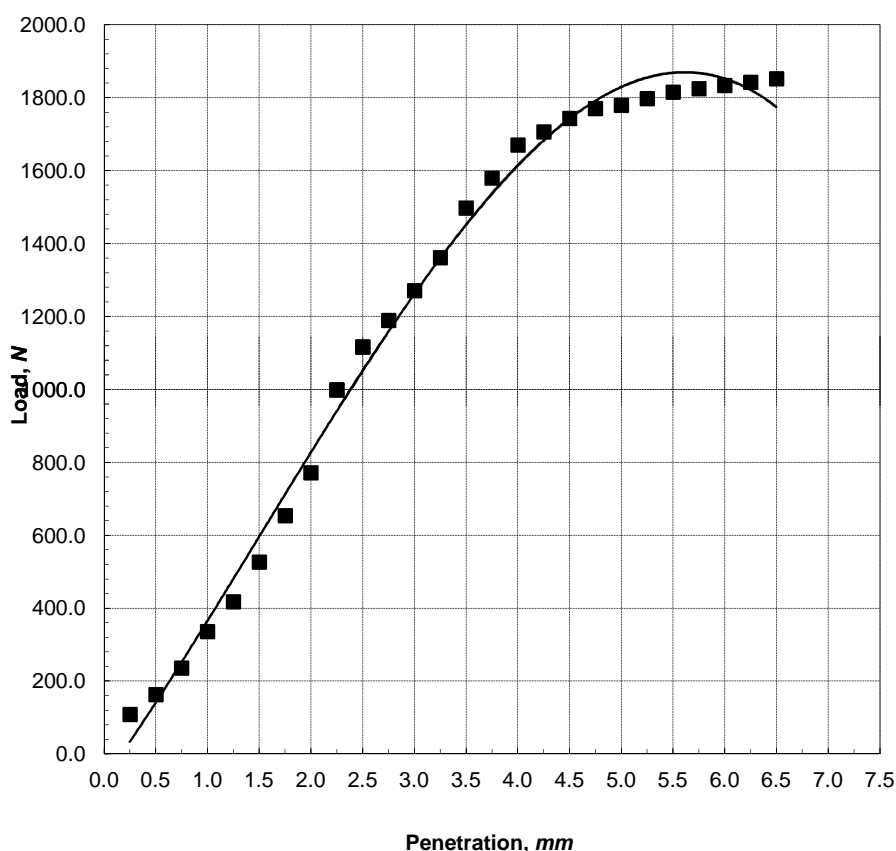
Groundwater: Standing water at base.

In Situ CBR Test Results

Job Name : Underpass, Underpass at Bicester								Job NO.	JN0591
Client : A2 Dominion								Hole Ref	CBR9
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	Depth, m	0.35
2.50	123	1116.6	/	1051.1	13,200	8.0		Water Content,%	22.2
5.00	196	1779.3	/	1829.3	20,000	9.1	9.1	Date	18/03/14

Pen, mm	Dial	Force, N
0.25	12	108.9
0.50	18	163.4
0.75	26	236.0
1.00	37	335.9
1.25	46	417.6
1.50	58	526.5
1.75	72	653.6
2.00	85	771.7
2.25	110	998.6
2.50	123	1116.6
2.75	131	1189.3
3.00	140	1271.0
3.25	150	1361.7
3.50	165	1497.9
3.75	174	1579.6
4.00	184	1670.4
4.25	188	1706.7
4.50	192	1743.0
4.75	195	1770.3
5.00	196	1779.3
5.25	198	1797.5
5.50	200	1815.7
5.75	201	1824.7
6.00	202	1833.8
6.25	203	1842.9
6.50	204	1852.0
6.75	/	/
7.00	/	/
7.25	/	/
7.50	/	/

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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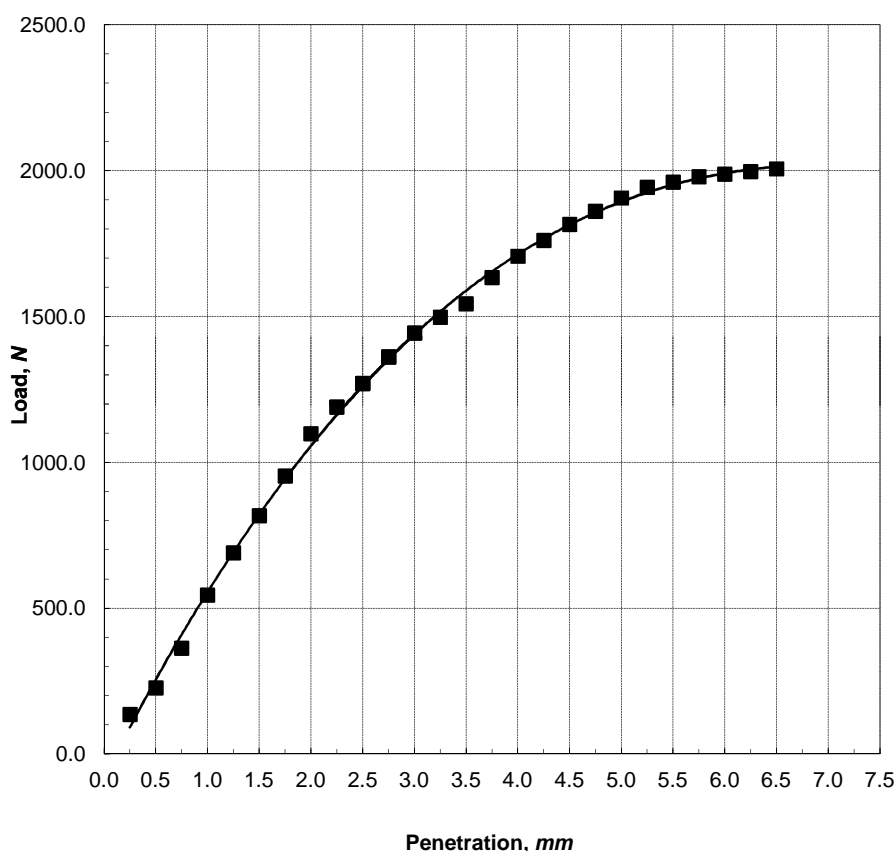
Notes:	* Load Ring No:	Creton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	2.0%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name : Underpass, Underpass at Bicester								Job NO.	JN0591
Client : A2 Dominion								Hole Ref	CBR10
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	Depth, m	0.35
2.50	140	1271.0	/	1261.5	13,200	9.6		Water Content, %	
5.00	210	1906.4	/	1893.1	20,000	9.5	9.6	Date	18/03/14

Pen, mm	Dial	Force, N
0.25	15	136.2
0.50	25	227.0
0.75	40	363.1
1.00	60	544.7
1.25	76	690.0
1.50	90	817.0
1.75	105	953.2
2.00	121	1098.5
2.25	131	1189.3
2.50	140	1271.0
2.75	150	1361.7
3.00	159	1443.4
3.25	165	1497.9
3.50	170	1543.3
3.75	180	1634.1
4.00	188	1706.7
4.25	194	1761.2
4.50	200	1815.7
4.75	205	1861.1
5.00	210	1906.4
5.25	214	1942.8
5.50	216	1960.9
5.75	218	1979.1
6.00	219	1988.1
6.25	220	1997.2
6.50	221	2006.3
6.75	/	/
7.00	/	/
7.25	/	/
7.50	/	/

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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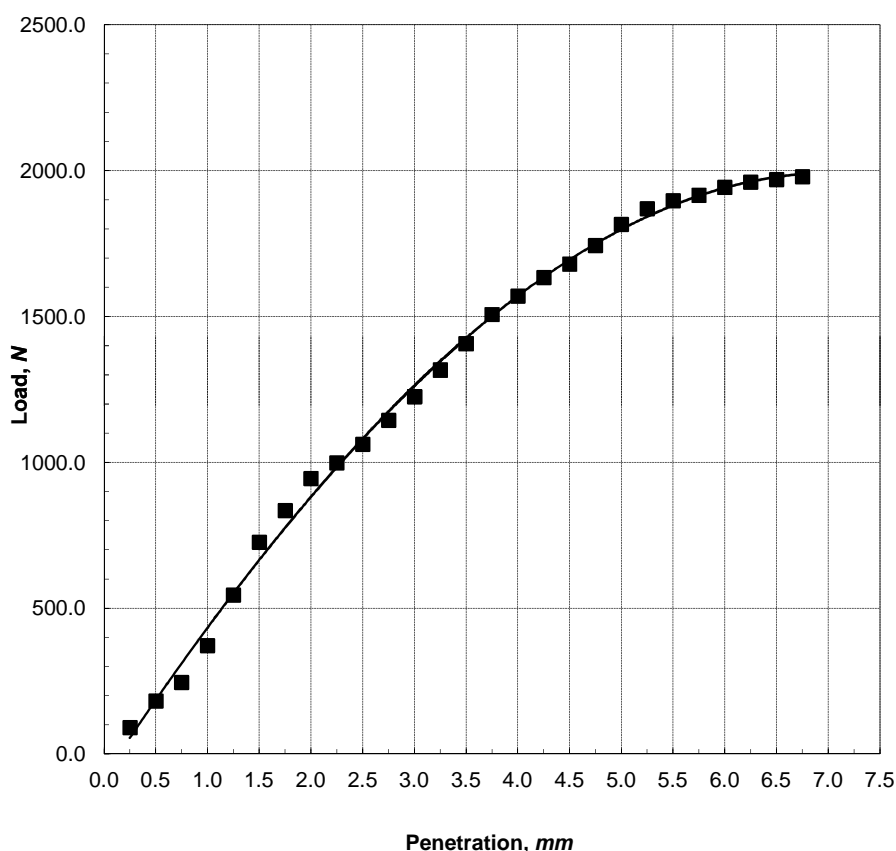
Notes:	* Load Ring No:	Creton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	4.0%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name : Underpass, Underpass at Bicester								Job NO.	JN0591
Client : A2 Dominion								Hole Ref	CBR11
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	Depth, m	0.40
2.50	117	1062.2	/	1080.6	13,200	8.2		Water Content, %	19.4
5.00	200	1815.7	/	1798.1	20,000	9.0	9.0	Date	18/03/14

Pen, mm	Dial	Force, N
0.25	10	90.8
0.50	20	181.6
0.75	27	245.1
1.00	41	372.2
1.25	60	544.7
1.50	80	726.3
1.75	92	835.2
2.00	104	944.1
2.25	110	998.6
2.50	117	1062.2
2.75	126	1143.9
3.00	135	1225.6
3.25	145	1316.4
3.50	155	1407.1
3.75	166	1507.0
4.00	173	1570.5
4.25	180	1634.1
4.50	185	1679.5
4.75	192	1743.0
5.00	200	1815.7
5.25	206	1870.1
5.50	209	1897.4
5.75	211	1915.5
6.00	214	1942.8
6.25	216	1960.9
6.50	217	1970.0
6.75	218	1979.1
7.00	/	/
7.25	/	/
7.50	/	/

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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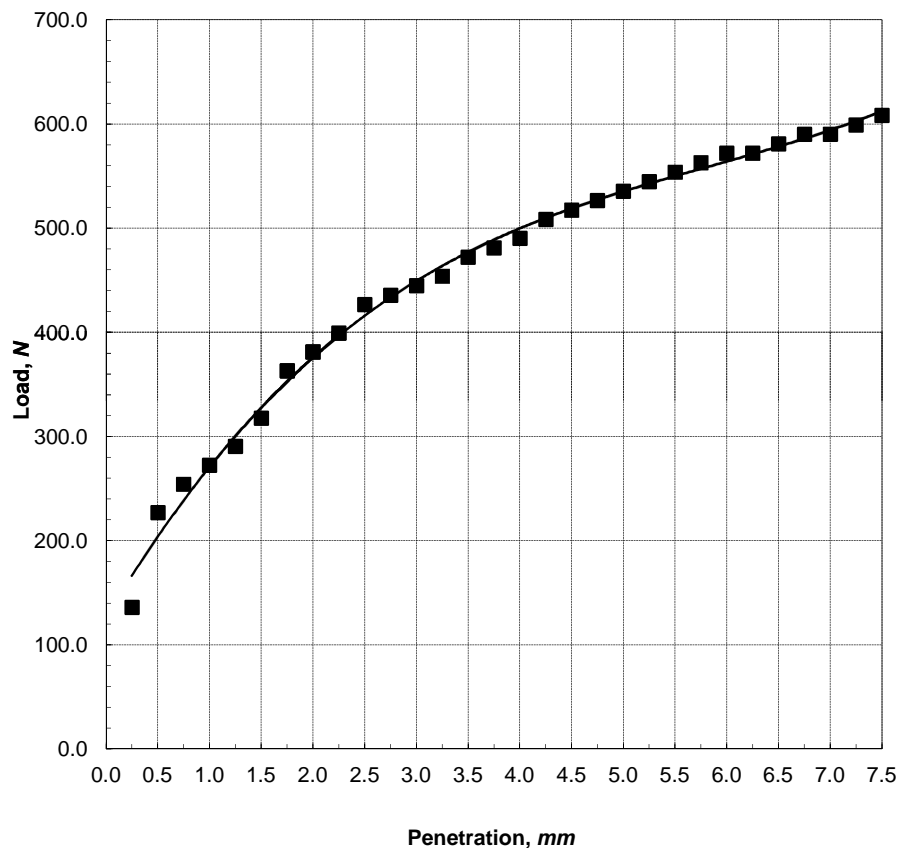
Notes:	* Load Ring No:	Creton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	2to10%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name : Underpass, Underpass at Bicester							Job NO.	JN0591	
Client : A2 Dominion							Hole Ref	CBR12	
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	Depth, m	0.50
2.50	47	426.7	/	415.9	13,200	3.2		Water Content, %	27.0
5.00	59	535.6	/	535.2	20,000	2.7	3.2	Date	18/03/14

Pen, mm	Dial	Force, N
0.25	15	136.2
0.50	25	227.0
0.75	28	254.2
1.00	30	272.3
1.25	32	290.5
1.50	35	317.7
1.75	40	363.1
2.00	42	381.3
2.25	44	399.4
2.50	47	426.7
2.75	48	435.8
3.00	49	444.8
3.25	50	453.9
3.50	52	472.1
3.75	53	481.1
4.00	54	490.2
4.25	56	508.4
4.50	57	517.5
4.75	58	526.5
5.00	59	535.6
5.25	60	544.7
5.50	61	553.8
5.75	62	562.9
6.00	63	571.9
6.25	63	571.9
6.50	64	581.0
6.75	65	590.1
7.00	65	590.1
7.25	66	599.2
7.50	67	608.2

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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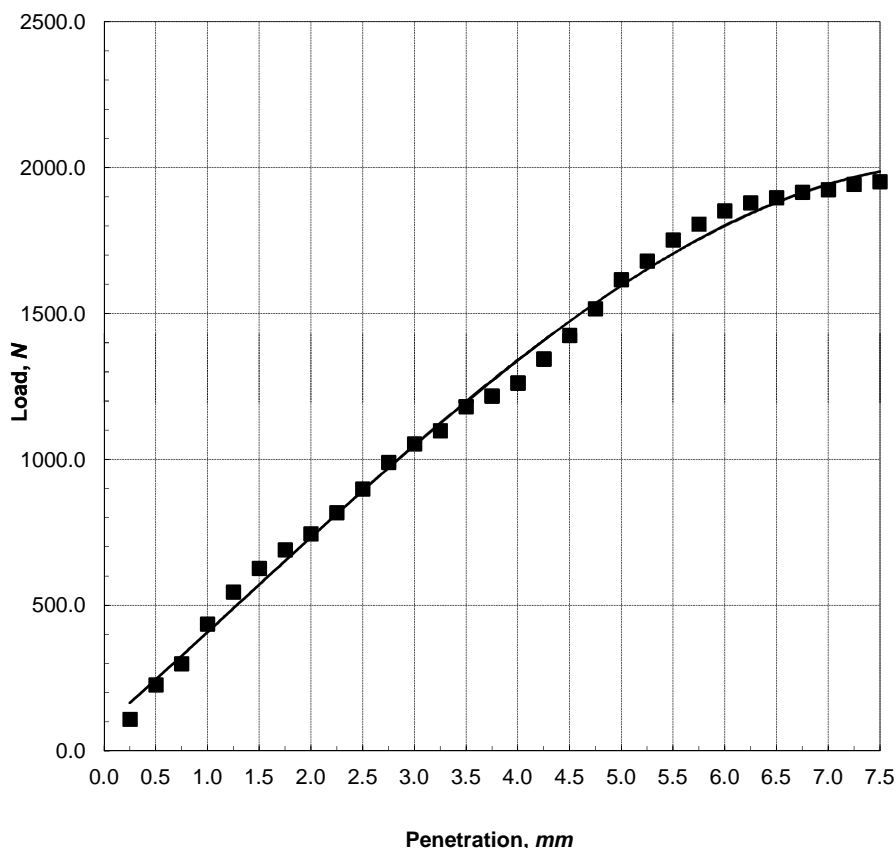
Notes:	* Load Ring No:	Creton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	1to3%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name : Underpass, Underpass at Bicester								Job NO.	JN0591
Client : A2 Dominion								Hole Ref	CBR13
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	Depth, m	0.40
2.50	99	898.8	/	892.1	13,200	6.8		Water Content, %	19.5
5.00	178	1615.9	/	1595.1	20,000	8.0	8.0	Date	18/03/14

Pen, mm	Dial	Force, N
0.25	12	108.9
0.50	25	227.0
0.75	33	299.6
1.00	48	435.8
1.25	60	544.7
1.50	69	626.4
1.75	76	690.0
2.00	82	744.4
2.25	90	817.0
2.50	99	898.8
2.75	109	989.5
3.00	116	1053.1
3.25	121	1098.5
3.50	130	1180.2
3.75	134	1216.5
4.00	139	1261.9
4.25	148	1343.6
4.50	157	1425.3
4.75	167	1516.1
5.00	178	1615.9
5.25	185	1679.5
5.50	193	1752.1
5.75	199	1806.6
6.00	204	1852.0
6.25	207	1879.2
6.50	209	1897.4
6.75	211	1915.5
7.00	212	1924.6
7.25	214	1942.8
7.50	215	1951.8

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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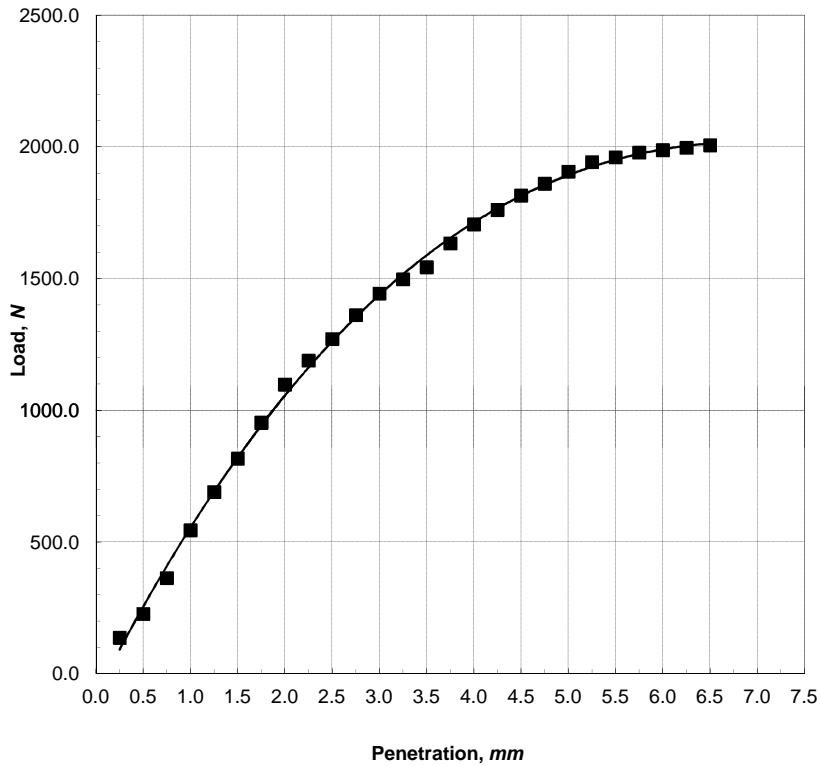
Notes:	* Load Ring No:	Creaton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	3to5%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name :	Underpass, Underpass at Bicester						Job NO.	JN0591
Client :	A2 Dominion						Hole Ref	CBR10
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	
2.50	140	1271.0	/	1261.5	13,200	9.6		
5.00	210	1906.4	/	1893.1	20,000	9.5	9.6	
							Depth, m	0.35
							Water Content,%	
							Date	18/03/14

Pen, mm	Dial	Force, N
0.25	15	136.2
0.50	25	227.0
0.75	40	363.1
1.00	60	544.7
1.25	76	690.0
1.50	90	817.0
1.75	105	953.2
2.00	121	1098.5
2.25	131	1189.3
2.50	140	1271.0
2.75	150	1361.7
3.00	159	1443.4
3.25	165	1497.9
3.50	170	1543.3
3.75	180	1634.1
4.00	188	1706.7
4.25	194	1761.2
4.50	200	1815.7
4.75	205	1861.1
5.00	210	1906.4
5.25	214	1942.8
5.50	216	1960.9
5.75	218	1979.1
6.00	219	1988.1
6.25	220	1997.2
6.50	221	2006.3
6.75	/	/
7.00	/	/
7.25	/	/
7.50	/	/

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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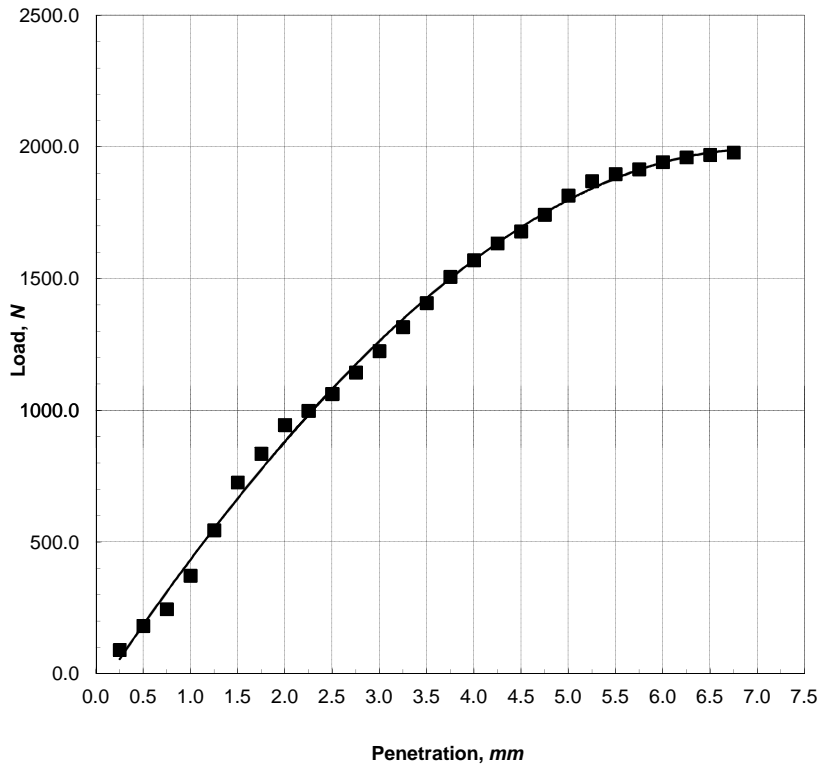
Notes:	* Load Ring No:	Creaton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	4.0%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name : Underpass, Underpass at Bicester							Job NO.	JN0591
Client : A2 Dominion							Hole Ref	CBR11
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	
2.50	117	1062.2	/	1080.6	13,200	8.2		
5.00	200	1815.7	/	1798.1	20,000	9.0	9.0	
							Depth, m	0.40
							Water Content,%	19.4
							Date	18/03/14

Pen, mm	Dial	Force, N
0.25	10	90.8
0.50	20	181.6
0.75	27	245.1
1.00	41	372.2
1.25	60	544.7
1.50	80	726.3
1.75	92	835.2
2.00	104	944.1
2.25	110	998.6
2.50	117	1062.2
2.75	126	1143.9
3.00	135	1225.6
3.25	145	1316.4
3.50	155	1407.1
3.75	166	1507.0
4.00	173	1570.5
4.25	180	1634.1
4.50	185	1679.5
4.75	192	1743.0
5.00	200	1815.7
5.25	206	1870.1
5.50	209	1897.4
5.75	211	1915.5
6.00	214	1942.8
6.25	216	1960.9
6.50	217	1970.0
6.75	218	1979.1
7.00	/	/
7.25	/	/
7.50	/	/

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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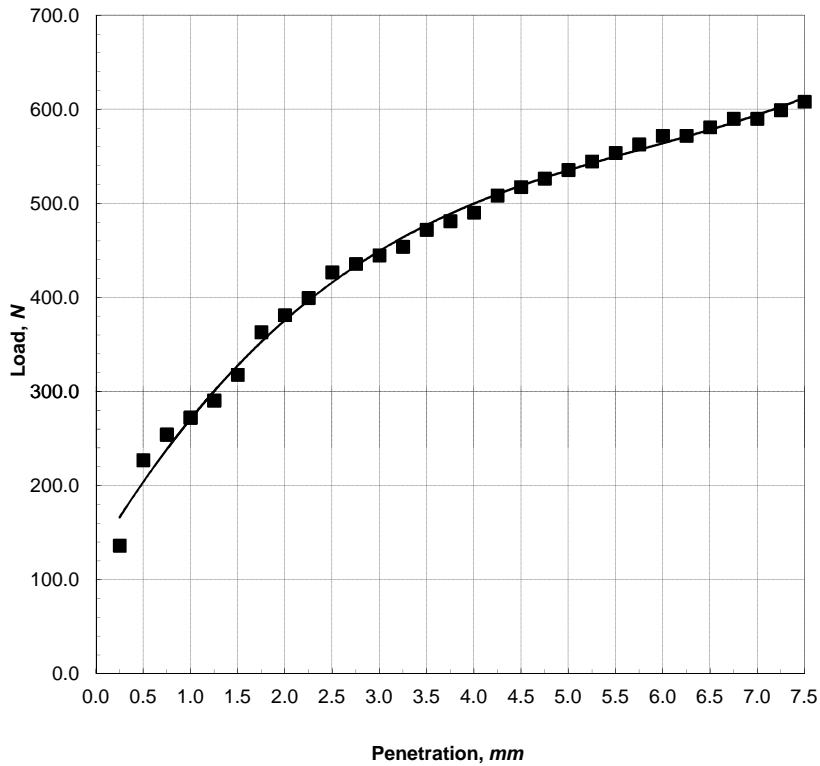
Notes:	* Load Ring No:	Creaton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	2to10%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name :	Underpass, Underpass at Bicester						Job NO.	JN0591
Client :	A2 Dominion						Hole Ref	CBR12
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	
2.50	47	426.7	/	415.9	13,200	3.2		
5.00	59	535.6	/	535.2	20,000	2.7	3.2	
							Depth, m	0.50
							Water Content,%	27.0
							Date	18/03/14

Pen, mm	Dial	Force, N
0.25	15	136.2
0.50	25	227.0
0.75	28	254.2
1.00	30	272.3
1.25	32	290.5
1.50	35	317.7
1.75	40	363.1
2.00	42	381.3
2.25	44	399.4
2.50	47	426.7
2.75	48	435.8
3.00	49	444.8
3.25	50	453.9
3.50	52	472.1
3.75	53	481.1
4.00	54	490.2
4.25	56	508.4
4.50	57	517.5
4.75	58	526.5
5.00	59	535.6
5.25	60	544.7
5.50	61	553.8
5.75	62	562.9
6.00	63	571.9
6.25	63	571.9
6.50	64	581.0
6.75	65	590.1
7.00	65	590.1
7.25	66	599.2
7.50	67	608.2

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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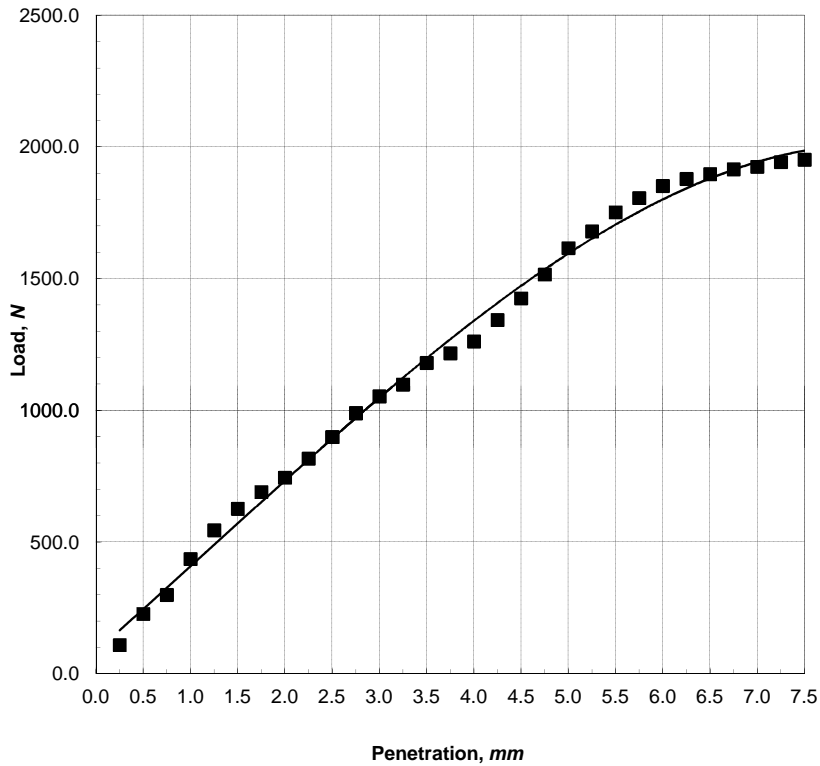
Notes:	* Load Ring No:	Creton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	1to3%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

In Situ CBR Test Results

Job Name :	Underpass, Underpass at Bicester						Job NO.	JN0591	
Client :	A2 Dominion						Hole Ref	CBR13	
Penetr mm	Dial Rdg divs	Force, N reading	Zero Shift	Force, N Curve	Standard Force, N	CBR, % calculated	CBR, % design	Depth, m	0.40
2.50	99	898.8	/	892.1	13,200	6.8		Water Content,%	19.5
5.00	178	1615.9	/	1595.1	20,000	8.0	8.0	Date	18/03/14

Pen, mm	Dial	Force, N
0.25	12	108.9
0.50	25	227.0
0.75	33	299.6
1.00	48	435.8
1.25	60	544.7
1.50	69	626.4
1.75	76	690.0
2.00	82	744.4
2.25	90	817.0
2.50	99	898.8
2.75	109	989.5
3.00	116	1053.1
3.25	121	1098.5
3.50	130	1180.2
3.75	134	1216.5
4.00	139	1261.9
4.25	148	1343.6
4.50	157	1425.3
4.75	167	1516.1
5.00	178	1615.9
5.25	185	1679.5
5.50	193	1752.1
5.75	199	1806.6
6.00	204	1852.0
6.25	207	1879.2
6.50	209	1897.4
6.75	211	1915.5
7.00	212	1924.6
7.25	214	1942.8
7.50	215	1951.8

Force-Penetration Relationship for CBR Test



* No correction required for the curve.

Depth, m	Soil Description	Water	Samples
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Notes:	* Load Ring No:	Creaton 8320	Ring Factor:	9.0783	Tested by:	PO
	* Surcharge Mass:	3X250	MEXE, % :	3to5%	Checked by:	
	* BS 1377 1990 Test No 4.3				Approved by:	CMN

Dynamic Cone Penetrometer (DCP) Test Results

Test No: BH2

Chainage:

Tested By: PO

Start Layer: G.L

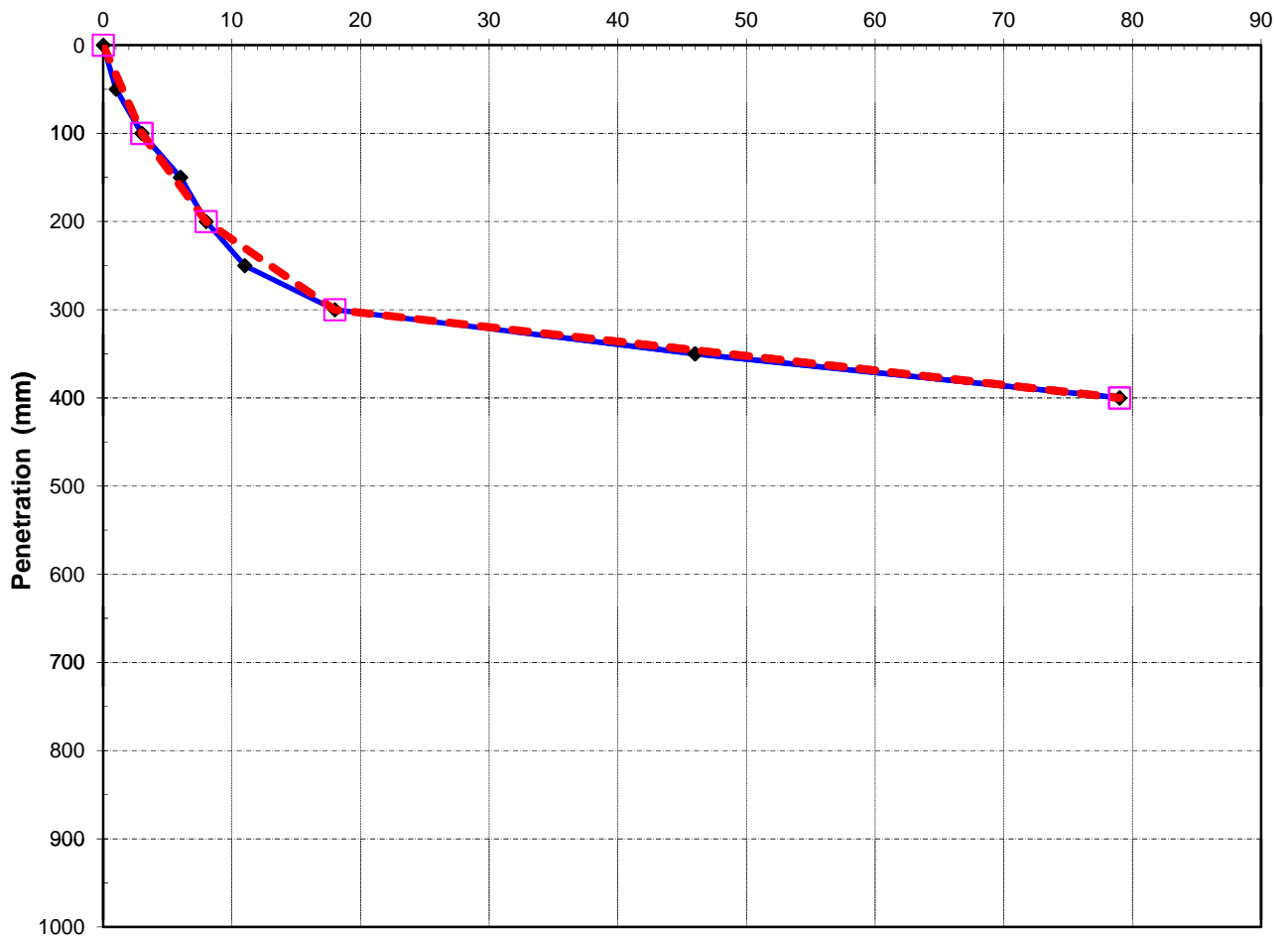
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	100	100	3	3	33.3	4.8		
2	100	200	100	8	5	20.0	9.3		
3	200	300	100	18	10	10.0	22		
4	300	400	100	79	61	1.6	179		

Client: A2 Dominion	Job No: JN0591	
Site: Underpass, Underpass at Bicester	Date:	Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP1

Chainage:

Tested By: PO

Start Layer: G.L

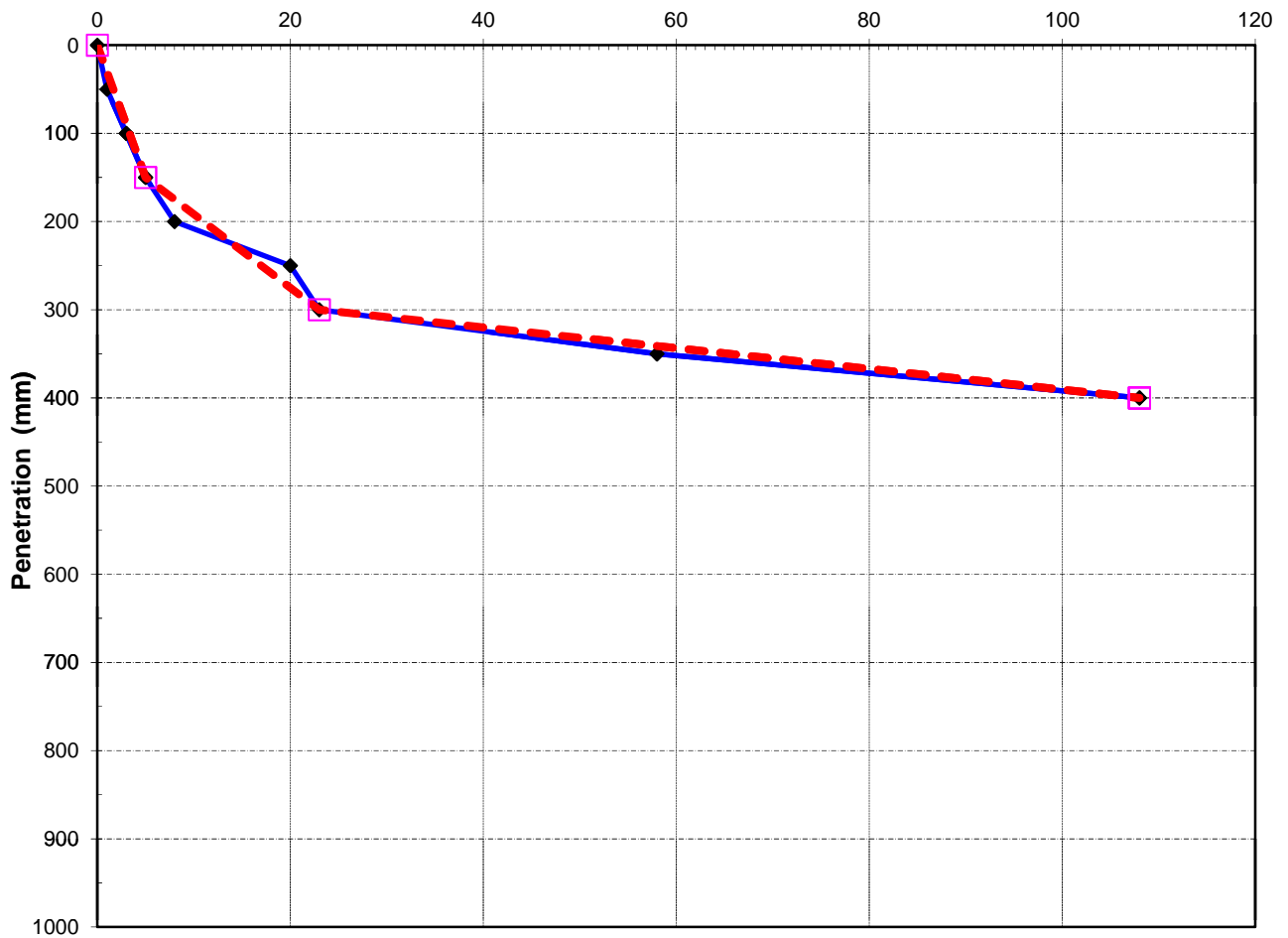
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	5	5	30.0	5.5		
2	150	300	150	23	18	8.3	28		
3	300	400	100	108	85	1.2	254		
4	400	400	0	108	0	0.0	0.0		

Client: A2 Dominion	Job No: JN0591	
Site: Underpass, Underpass at Bicester	Date:	Fig.:

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP2

Chainage:

Tested By: PO

Start Layer: G.L

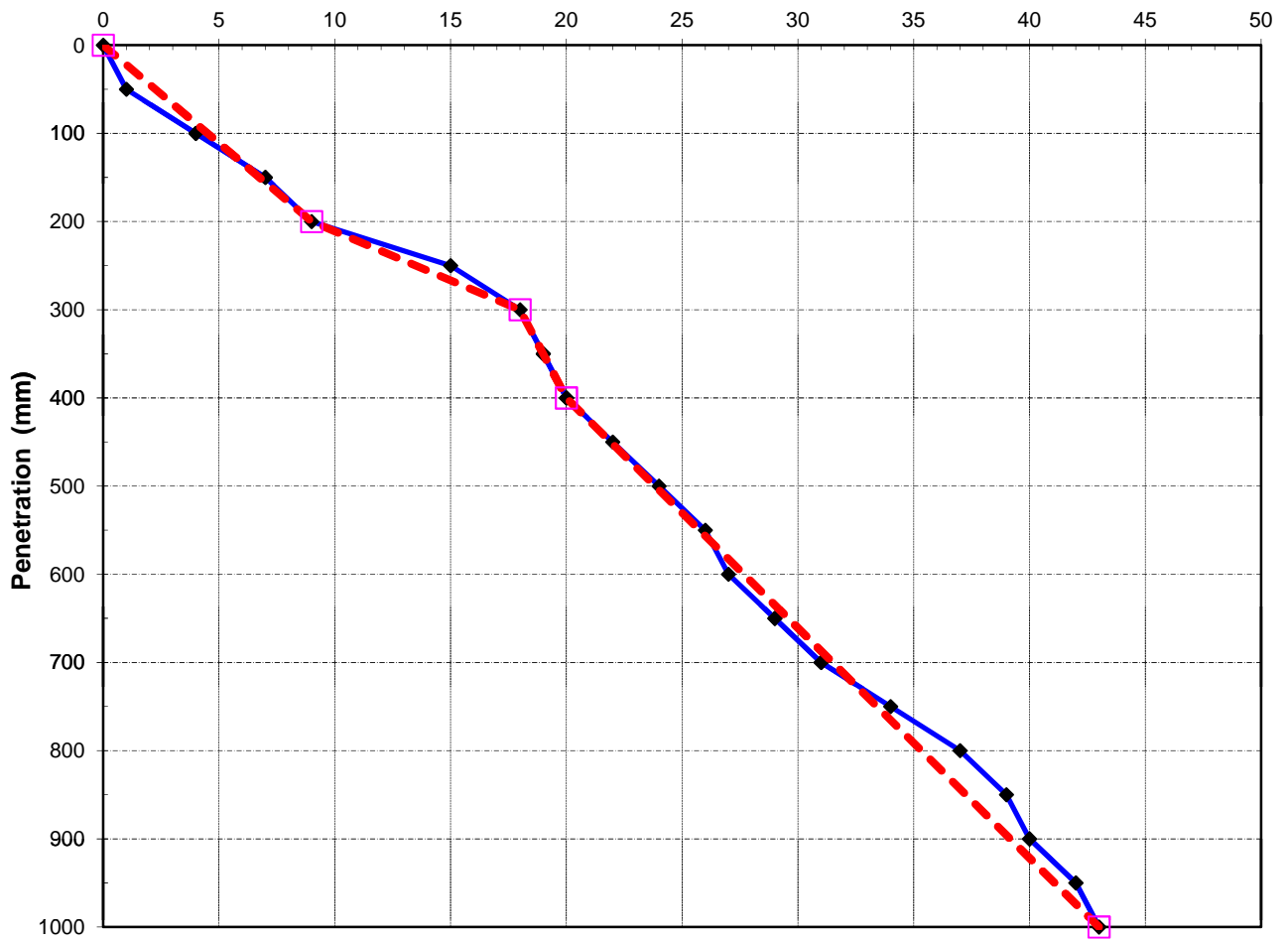
Checked By: CMN

Soil Condition:

Test Date: 17-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	200	200	9	9	22.2	8.1		
2	200	300	100	18	9	11.1	20		
3	300	400	100	20	2	50.0	2.9		
4	400	1000	600	43	23	26.1	6.6		

Client: A2 Dominion

Job No: JN0591

Site: Underpass, Underpass at Bicester

Date:

Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP3

Chainage:

Tested By: PO

Start Layer: G.L

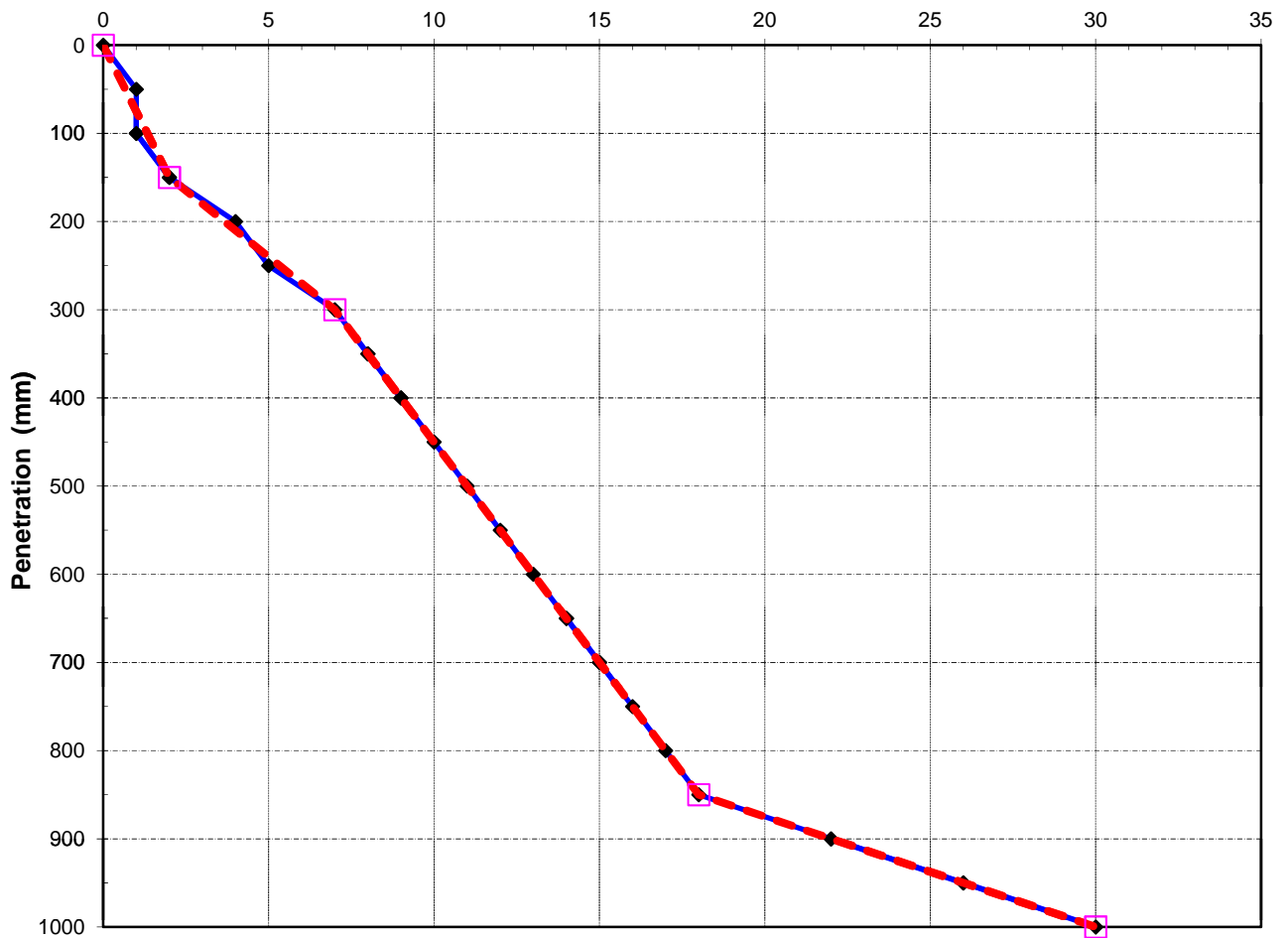
Checked By: CMN

Soil Condition:

Test Date: 17-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	2	2	75.0	1.7		
2	150	300	150	7	5	30.0	5.5		
3	300	850	550	18	11	50.0	2.9		
4	850	1000	150	30	12	12.5	17		

Client: A2 Dominion

Job No: JN0591

Site: Underpass, Underpass at Bicester

Date:

Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP9

Chainage:

Tested By: PO

Start Layer: GL

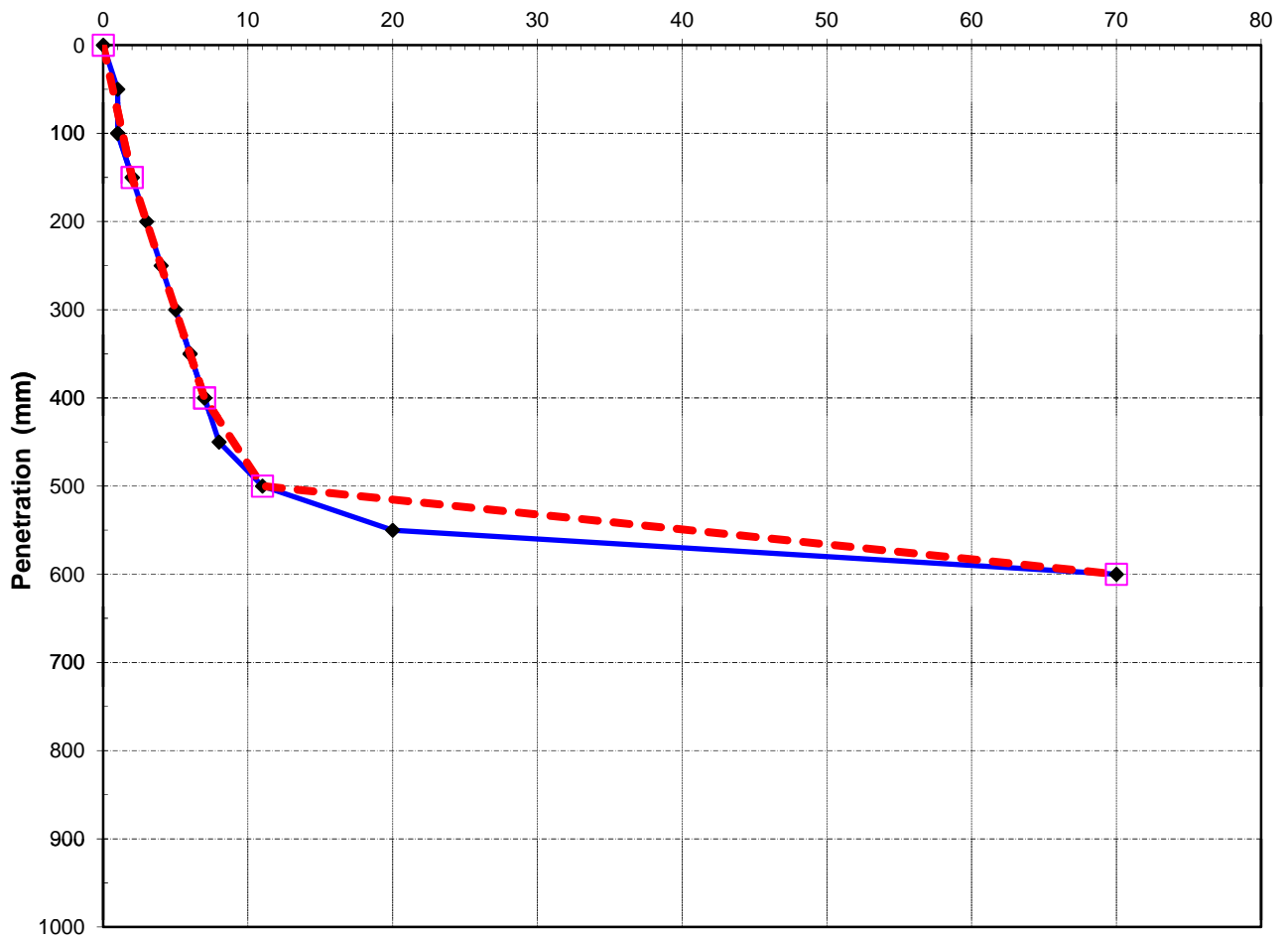
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	2	2	75.0	1.7		
2	150	400	250	7	5	50.0	2.9		
3	400	500	100	11	4	25.0	7.0		
4	500	600	100	70	59	1.7	173		

Client: A2 Dominion

Job No: JN0591

Site: Underpass, Underpass at Bicester

Date:

Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP10

Chainage:

Tested By: PO

Start Layer: G.L

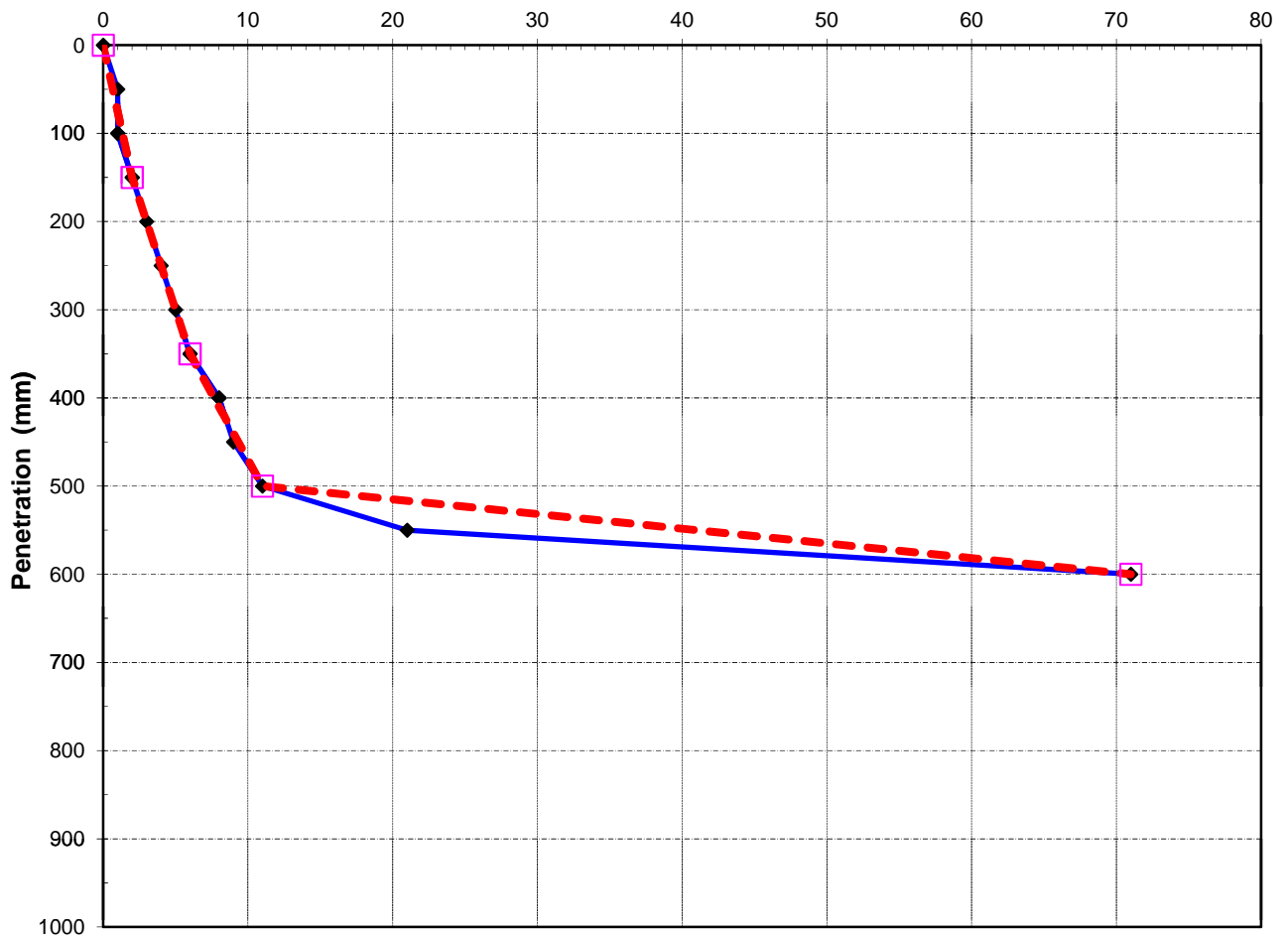
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	2	2	75.0	1.7		
2	150	350	200	6	4	50.0	2.9		
3	350	500	150	11	5	30.0	5.5		
4	500	600	100	71	60	1.7	176		

Client: A2 Dominion	Job No: JN0591	
Site: Underpass, Underpass at Bicester	Date:	Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP11

Chainage:

Tested By: PO

Start Layer: G.L

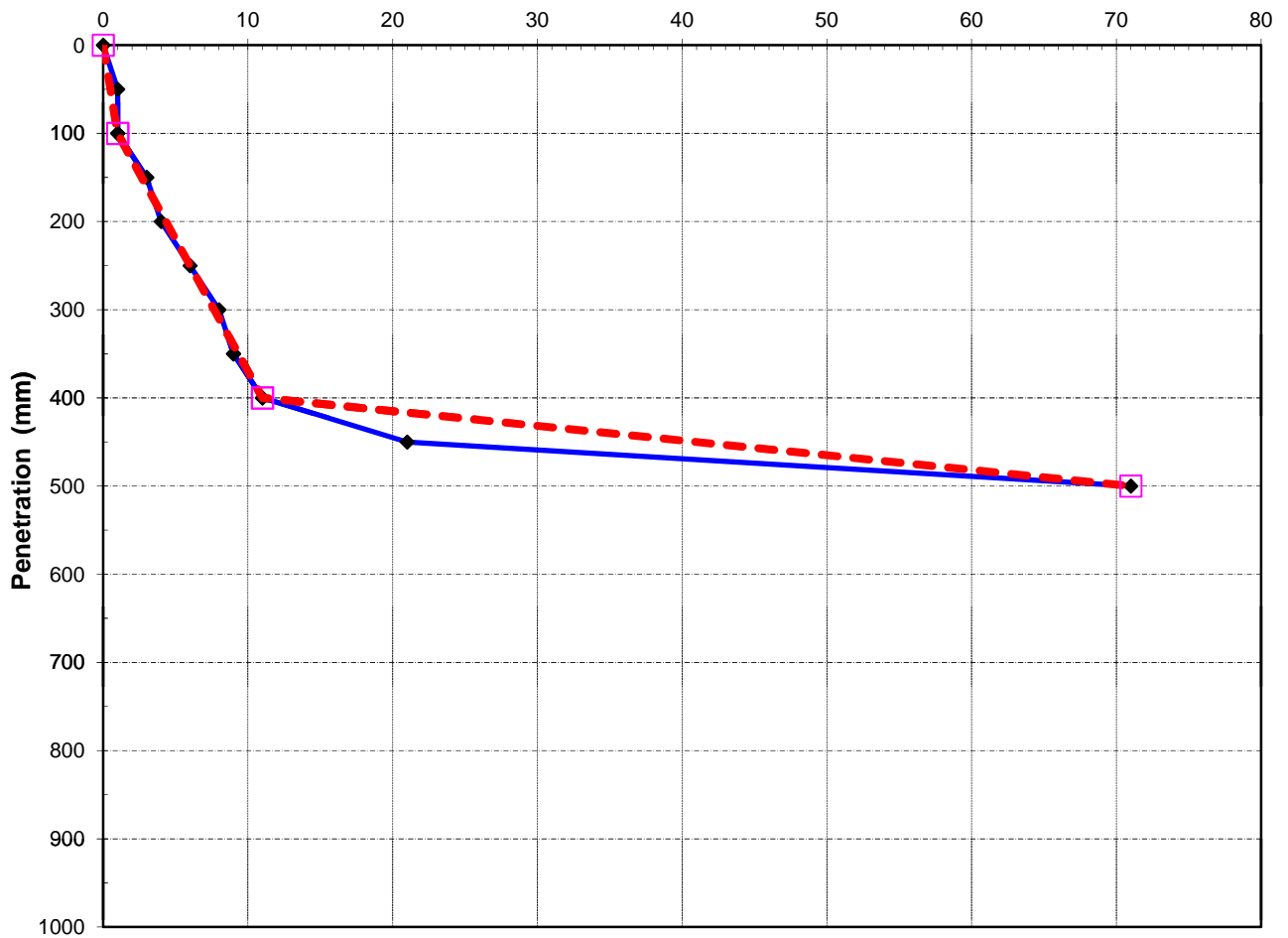
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	100	100	1	1	100.0	1.2		
2	100	400	300	11	10	30.0	5.5		
3	400	500	100	71	60	1.7	176		

Client: A2 Dominion

Job No: JN0591

Site: Underpass, Underpass at Bicester

Date:

Fig.

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP12

Chainage:

Tested By: PO

Start Layer: G.L

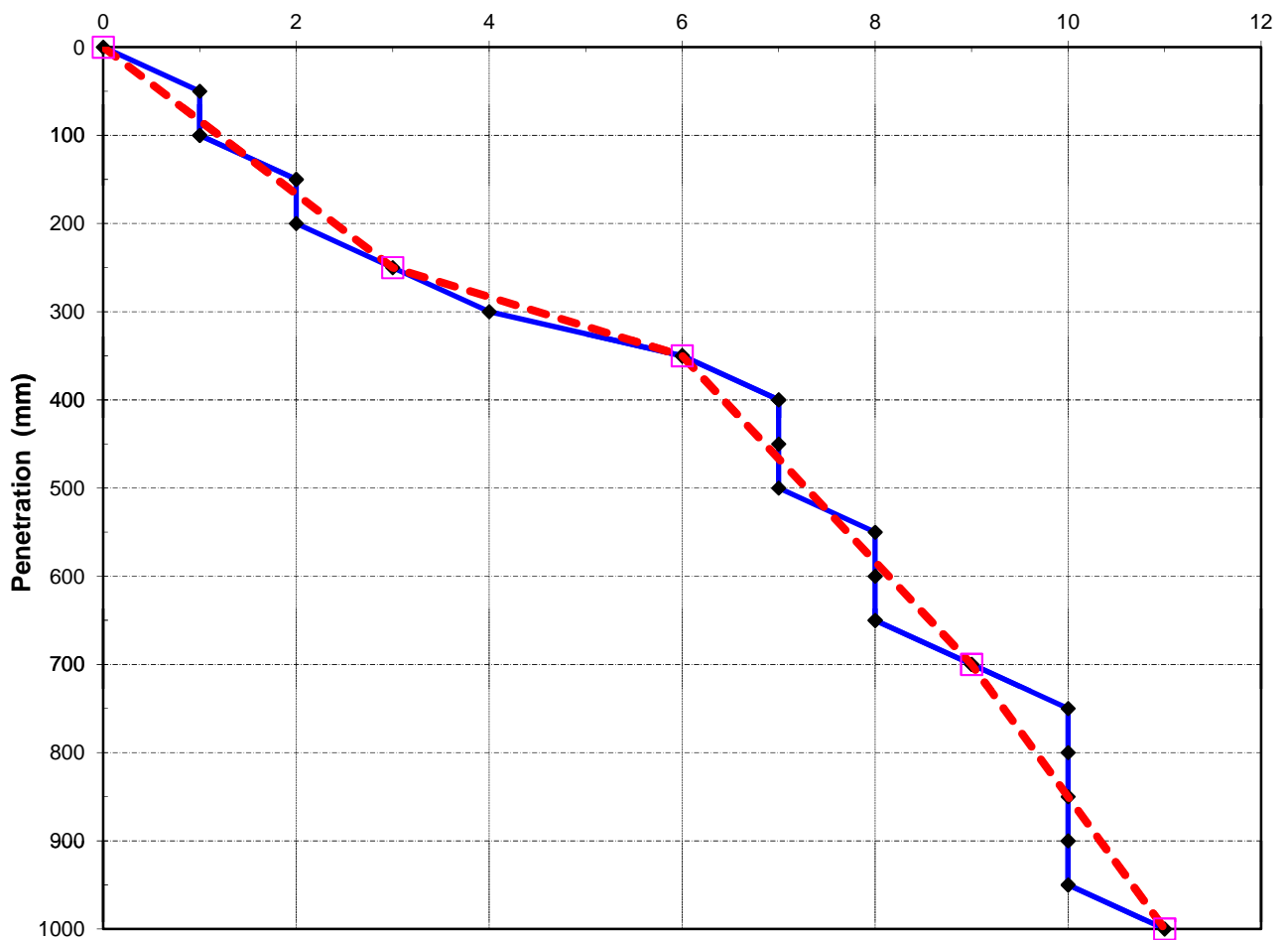
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	250	250	3	3	83.3	1.5		
2	250	350	100	6	3	33.3	4.8		
3	350	700	350	9	3	116.7	1.0		
4	700	1000	300	11	2	150.0	0.7		

Client: A2 Dominion	Job No: JN0591	
Site: Underpass, Underpass at Bicester	Date:	Fig.:

Dynamic Cone Penetrometer (DCP) Test Results

Test No: TP13

Chainage:

Tested By: PO

Start Layer: G.L

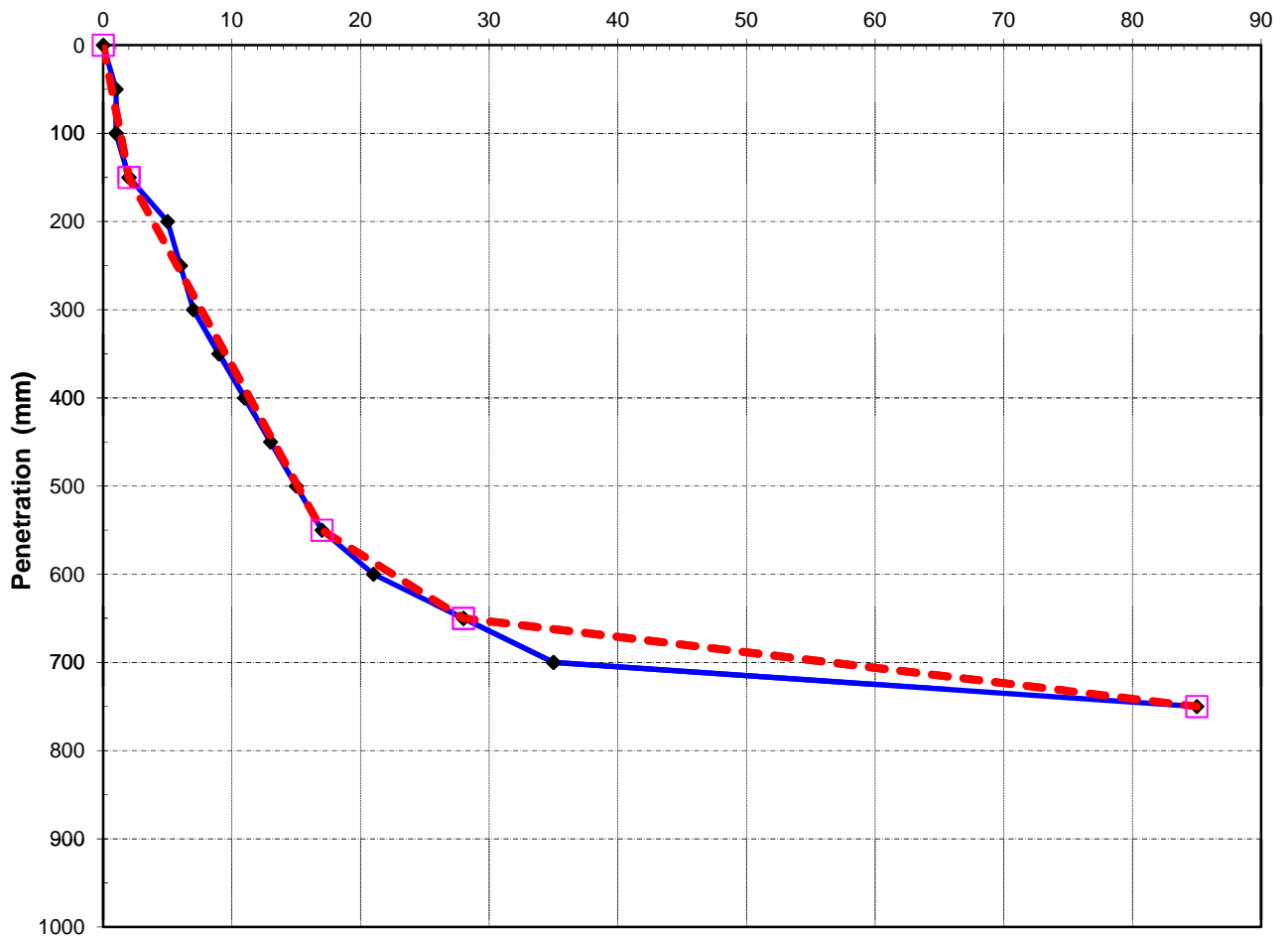
Checked By: CMN

Soil Condition:

Test Date: 18-Mar-14

Notes:

Perth Cone CBR Penetration vs Cumulative Blow Count
Cumulative Blow Count



Evaluated CBR Values from DCP Test Results

Layer No	From (mm)	To (mm)	Depth (mm)	Blow Count	No. of Blows	DCP mm/blow	CBR %	Soil Type	Remarks
1	0	150	150	2	2	75.0	1.7		
2	150	550	400	17	15	26.7	6.4		
3	550	650	100	28	11	9.1	25		
4	650	750	100	85	57	1.8	167		

Client: A2 Dominion	Job No: JN0591	
Site: Underpass, Underpass at Bicester	Date:	Fig.