5 April 2024
Job No: 0053246.9000

Beach Road Estates Limited
28B Moorhouse Ave
PO Box 2056
shanef@momentumprojects.co.nz
CHRISTCHURCH 8140

Attention: Shane Fairmaid

Dear Shane

Beach Grove Subdivision, Kaiapoi
Scala penetrometer testing Stage 6A

1 Introduction

This letter presents the results of the bearing capacity tests undertaken by Tonkin & Taylor Ltd (T+T) on the engineered hard fill prepared for Stage 6A lots 307 to 335 and 337 to 340, Beach Grove subdivision, Beach Road, Kaiapoi.

The work described in this document was commissioned by Beach Road Estates Ltd and was completed in accordance with the terms and conditions which are outlined in T+T's Variation No. 32 dated 10 July 2023[1], under project No. 53246.9000.

Stage 6A lots 336, 341-347, 396 and 397 have been excluded from this report, as Scala testing has not been undertaken. This is due to the area being preloaded. Testing on these specific lots will be conducted once the preload has been removed and the results will be presented in a separate letter.

2 Scala penetrometer results

33 Scala penetrometer tests were carried out on the Stage 6A lots on 21 March 2024. One Scala penetrometer test was completed on each lot. The locations of the Scala tests are shown on Figure 1, Appendix A.

The results of the Scala penetrometer logs are attached in Appendix C.

3 Summary of Scala penetrometer testing and indicated bearing capacity

The bearing capacity of the hardfill platform assessed from the Scala penetrometer test results (Appendix A) show that the lots tested meet the intent for a TC2 equivalent complying foundation, such as a rib-raft or similar.

[1] Tonkin & Taylor Ltd (10 July 2023). Variation order 32. *Beach Grove - Stage 6A Earthworks construction monitoring*. T+T ref 53246.9000.

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PO Box 13055, Christchurch 8141 P +64-3-363 2440 F +64-9-307 0265 E chc@tonkintaylor.co.nz

All Scala penetrometer testing of subgrade and placed hardfill during construction indicated that all material met the requirements of the specification[2].

Once the building foundation excavations have been carried out, the exposed subbase surface should be observed and tested by a suitably competent geo-professional to verify the building foundation conditions are consistent with the design report[3] and the bearing capacity described in this letter report.

4 Applicability

This report has been prepared for the exclusive use of our client Beach Road Estates Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
.....	.....
Hannah Tiong Geotechnical Engineer	Anna Sleight Project Director

5-Apr-24
\\ttgroup.local\corporate\christchurch\tt projects\53246\53246.9000\issueddocuments\2024_04_05.hati.stage_6a_bearing capacity_letter.docx

[2] Tonkin & Taylor Ltd (October 2022). Earthworks specification titled Stages 5 & 6 McIntosh Drain Earthworks Specification. Prepared for Beach Grove Estates Limited. T+T ref 53246.9000, Rev 1.

[3] Tonkin & Taylor Ltd (November 2021). *Beach Grove Stage 5 – 6 Geotechnical report for subdivision,* T+T Ref 53246.9000.

Appendix A Site Plan

Legend

- Scala Penetrometer Test Location (21/03/2024)

These lots have been excluded from this bearing capacity letter. It will be graded and compacted when the preload area have reached the settlement criteria (in ~ 3 months time).

Preload Areas outlined in orange

Stage 6A

703

SCALEBAR (m) 0 10 20 50

SCALE | 1:1000 @A3 | 1:500 @A1|

N

Appendix B Table of indicative bearing capacity

Lot number / Scala ID	Scala penetration into fill (mm)	Average number of blows per 50 mm over top 300mm or refusal depth	Allowable bearing capacity (kPa)	ULS bearing capacity (kPa)	Geotechnical ultimate bearing capacity (kPa)
307	200	5.5	260	520	780
308	400	5.5	260	520	780
309	400	5.5	260	520	780
310	400	5.5	260	520	780
311	300	5.5	260	520	780
312	200	5.5	260	520	780
313	150	5.5	260	520	780
314*	100	6.0	280	560	840
315*	100	8.5	360	720	1080
316*	100	7.0	310	620	930
317	300	6.5	290	580	870
318	400	6.0	280	560	840
319	300	5.5	260	520	780
320	250	5.0	250	500	750
321	150	5.5	260	520	780
322	300	5.5	260	520	780
323	300	5.5	260	520	780
324*	50	11.0	410	820	1230
325	150	4.5	220	440	660
326	350	4.5	220	440	660
327	150	5.0	250	500	750
328	200	6.0	280	560	840
329	250	5.5	260	520	780
330	200	4.5	220	440	660
331	250	5.0	250	500	750
332	250	6.0	280	560	840
333	250	5.0	250	500	750
334	350	5.0	250	500	750
335	300	5.0	250	500	750
337	200	6.0	280	560	840
338	300	5.0	250	500	750
339	300	6.0	280	560	840
340	300	5.0	250	500	750

*These tests encountered refusal within the top 100mm, likely due to large gravel particles. From adjacent Scala test results we can assume that the hardfill has been adequately compacted and the bearing capacity of the hardfill platform meet the intent for a TC2 equivalent complying foundation.

Appendix C Scala test results

Tonkin + Taylor

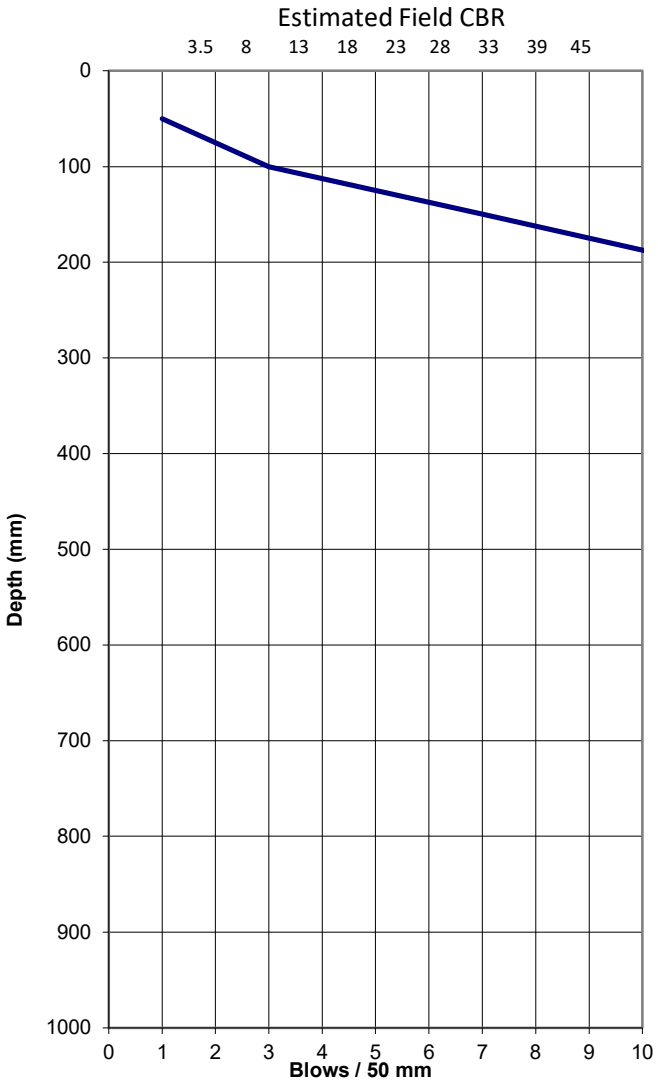
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***307***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*3*
150	*7*
200	*11*
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

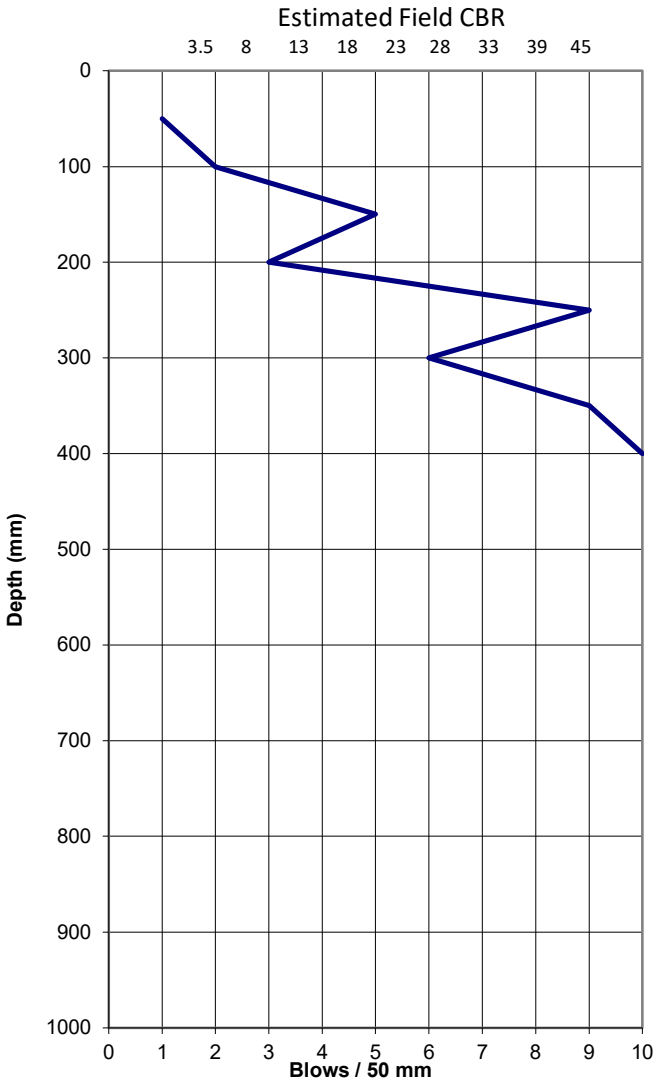
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***308***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*2*
150	*5*
200	*3*
250	*9*
300	*6*
350	*9*
400	*10*
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***309***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*3*
150	*3*
200	*4*
250	*7*
300	*8*
350	*7*
400	*11*
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	

Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

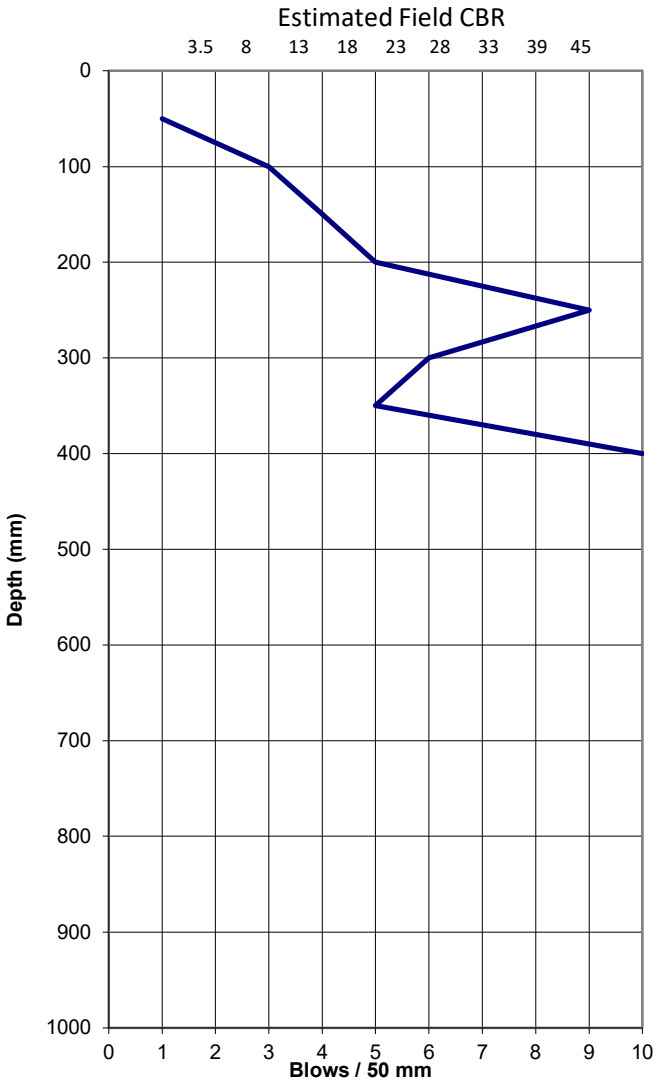
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***310***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*3*
150	*4*
200	*5*
250	*9*
300	*6*
350	*5*
400	*10*
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***311***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*2*
150	*6*
200	*6*
250	*6*
300	*11*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	

Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

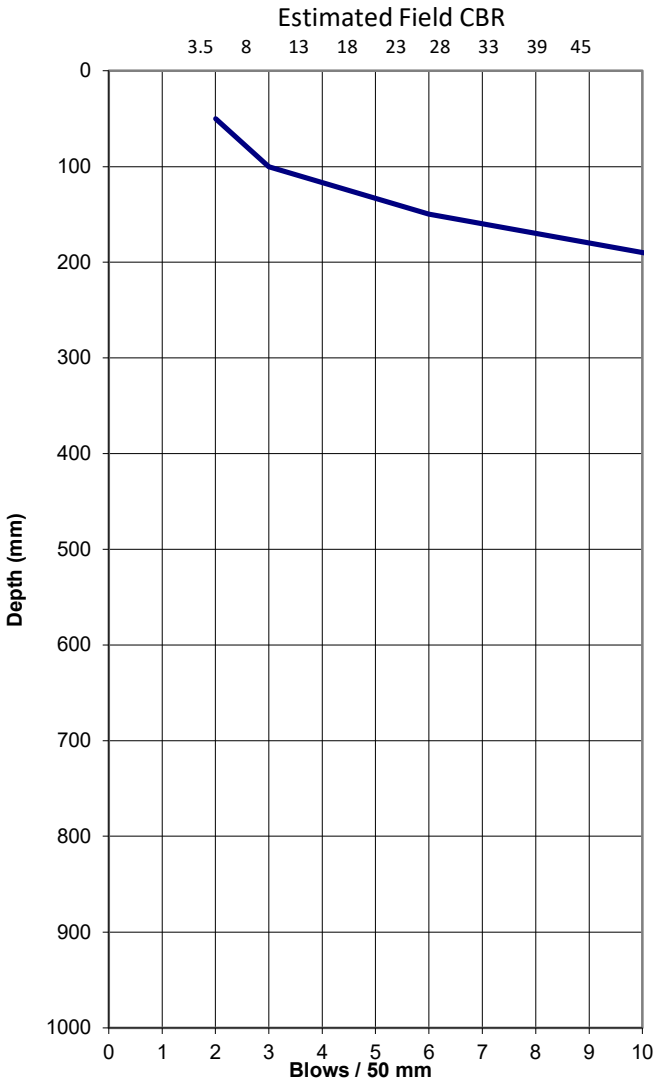
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***312***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*3*
150	*6*
200	*11*
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

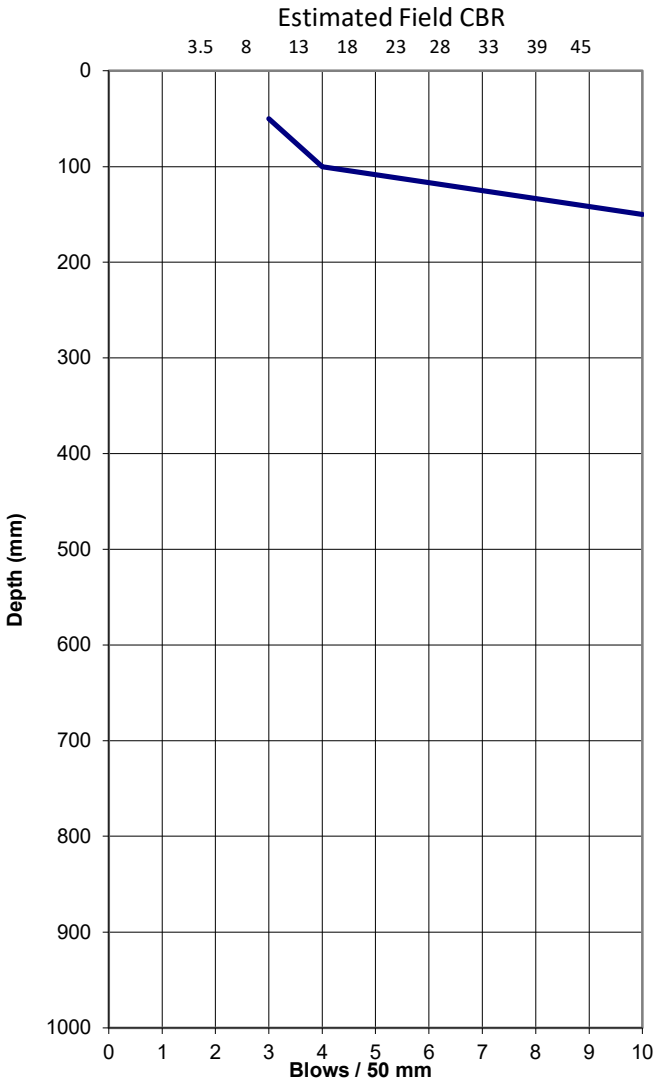
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***313***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*3*
100	*4*
150	*10*
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

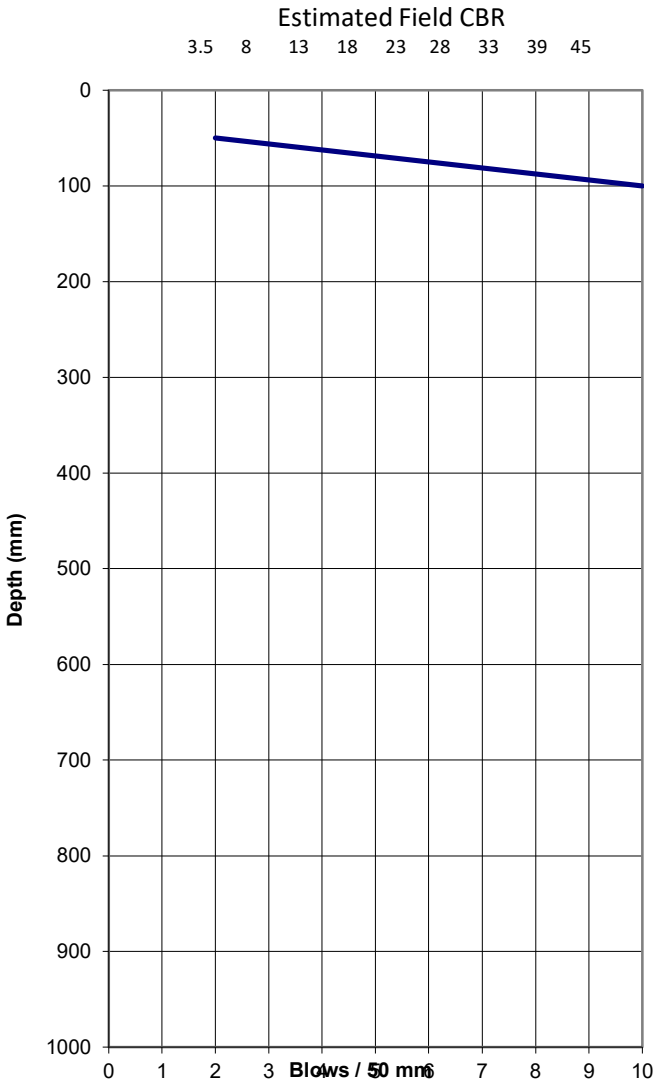
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***314***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*10*
150	
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

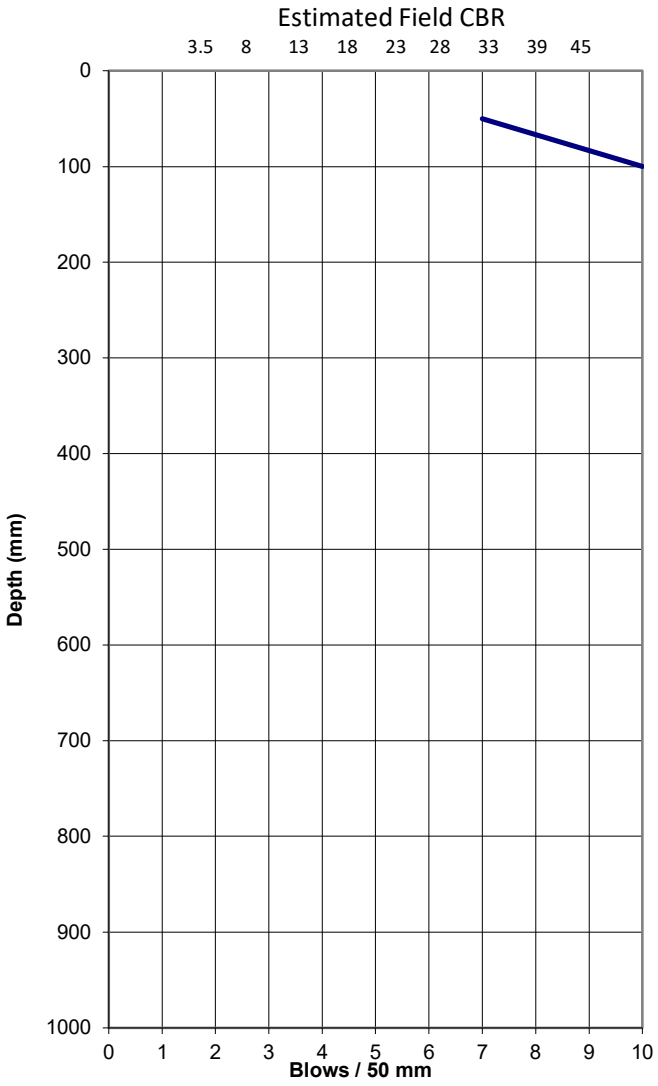
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***315***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*7*
100	*10*
150	
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

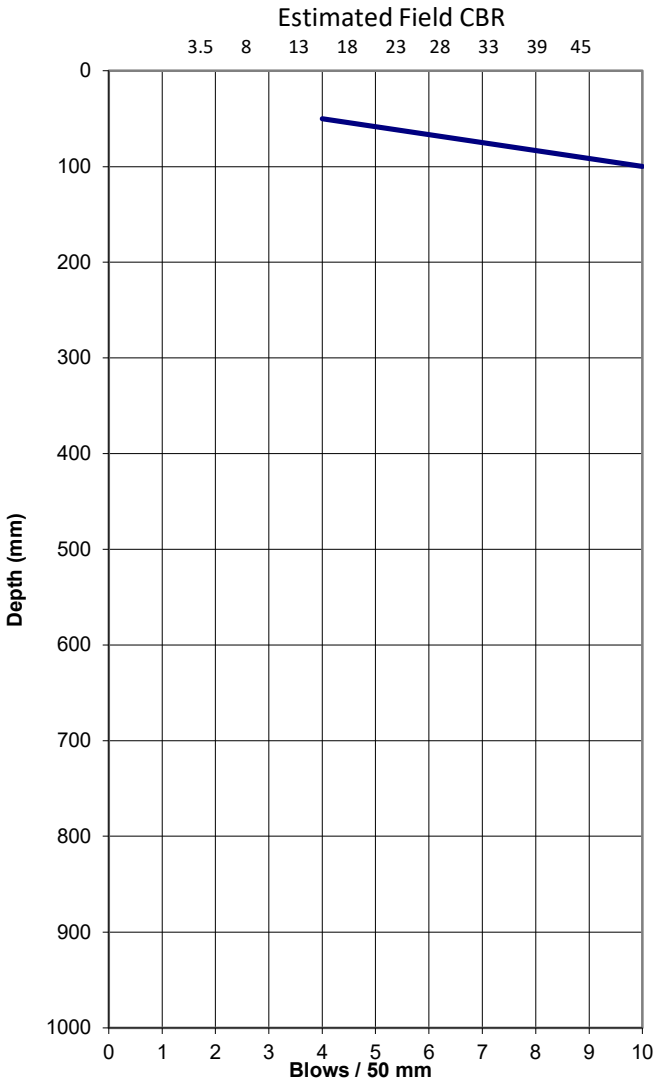
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***316***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*4*
100	*10*
150	
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

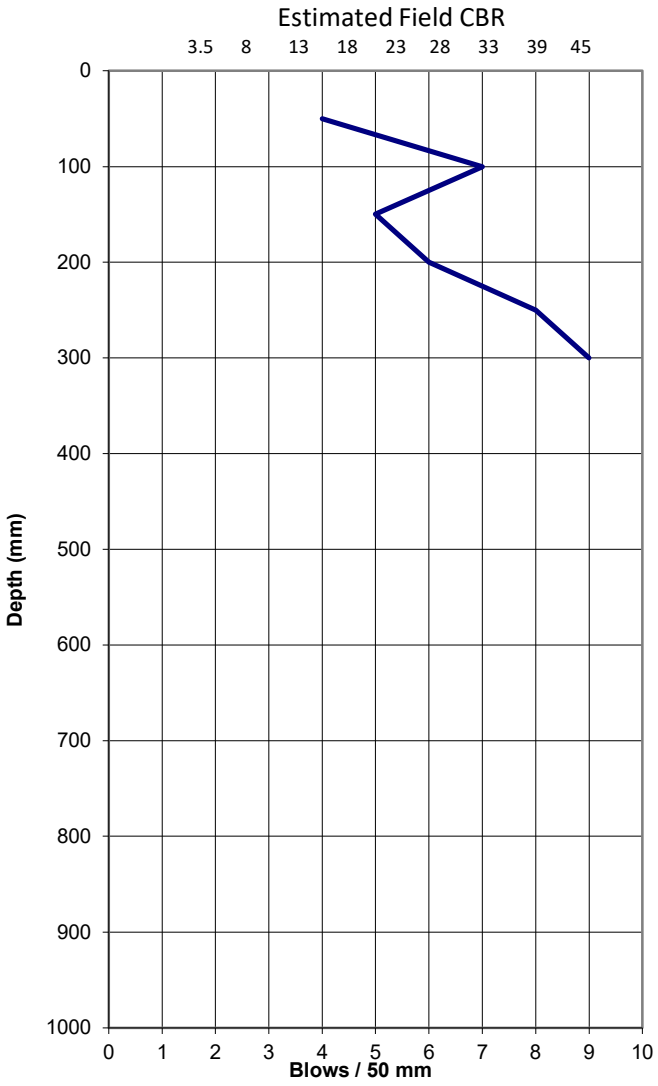
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***317***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*4*
100	*7*
150	*5*
200	*6*
250	*8*
300	*9*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

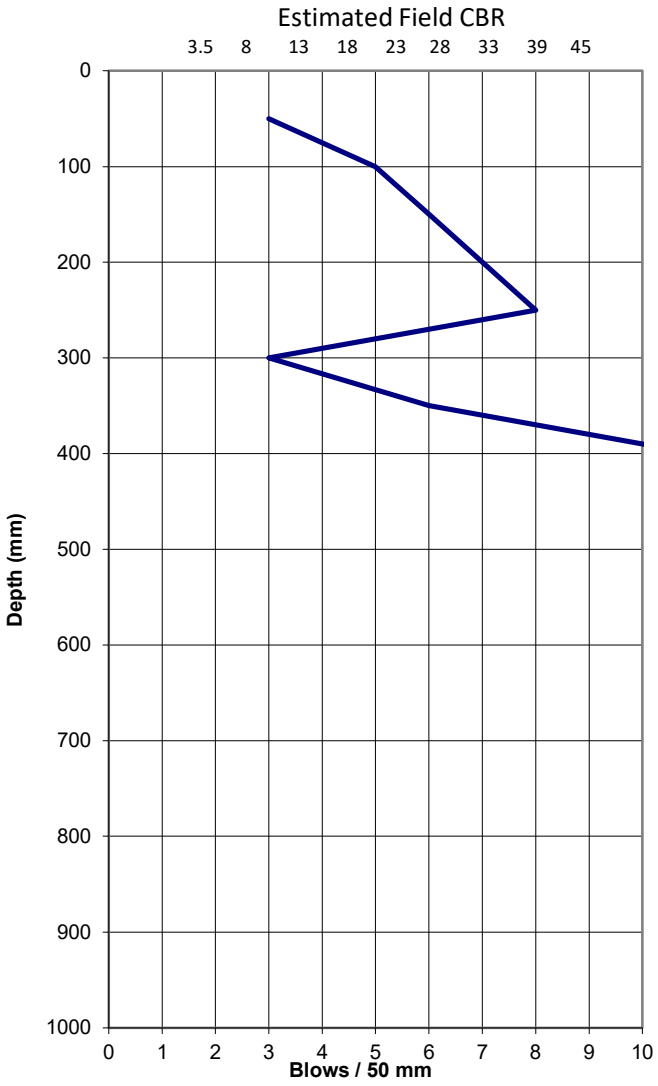
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***318***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*3*
100	*5*
150	*6*
200	*7*
250	*8*
300	*3*
350	*6*
400	*11*
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

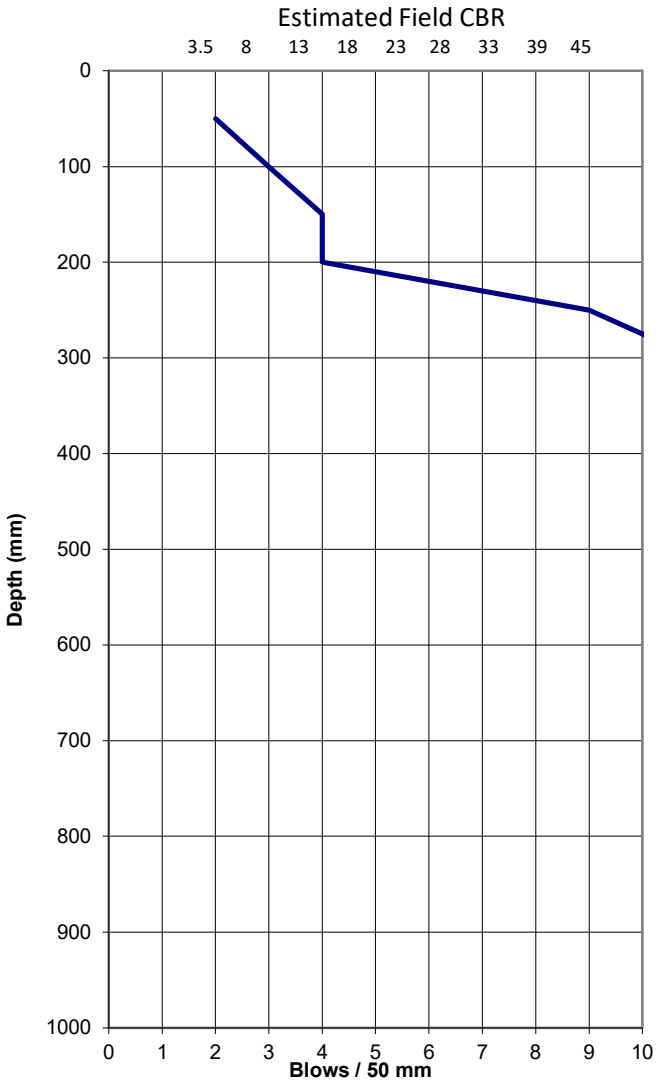
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***319***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*3*
150	*4*
200	*4*
250	*9*
300	*11*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

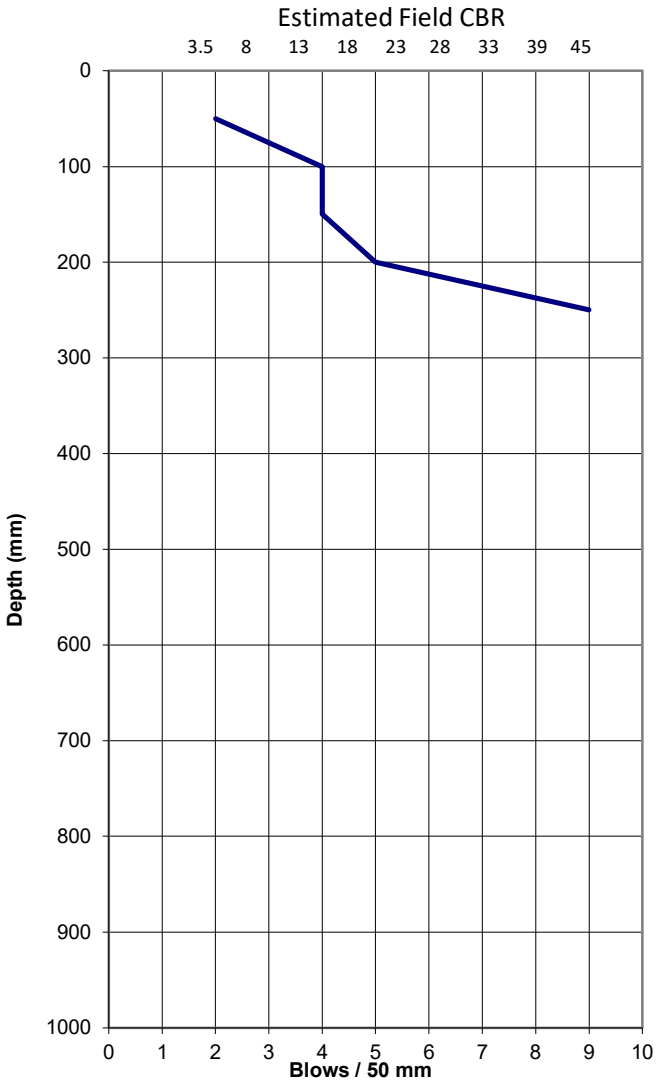
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***320***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*4*
150	*4*
200	*5*
250	*9*
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

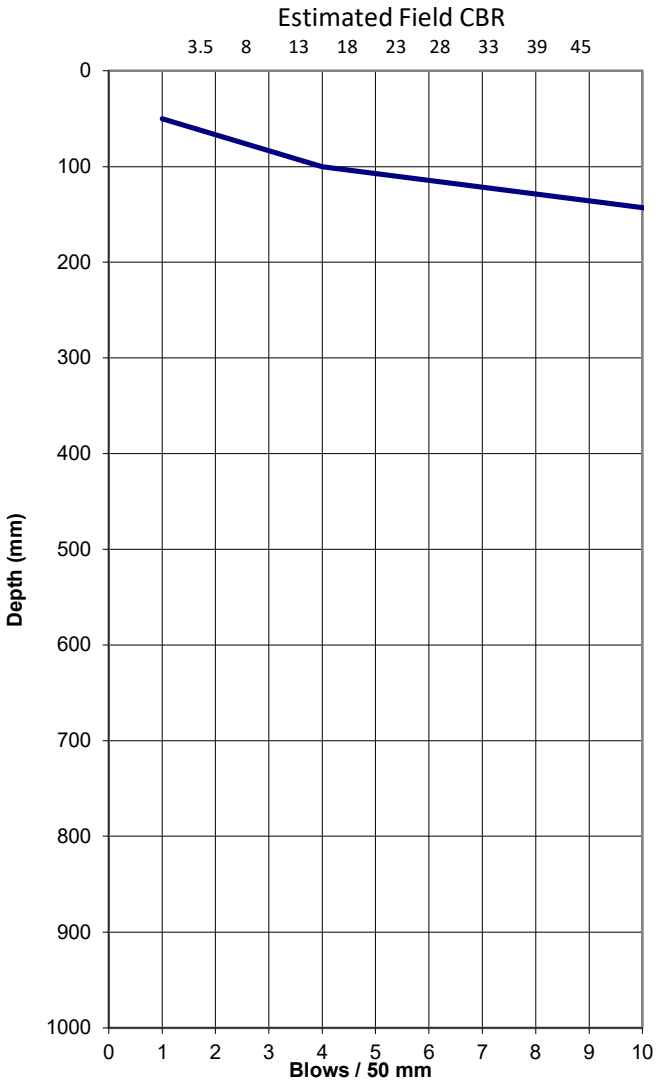
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***321***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*4*
150	*11*
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

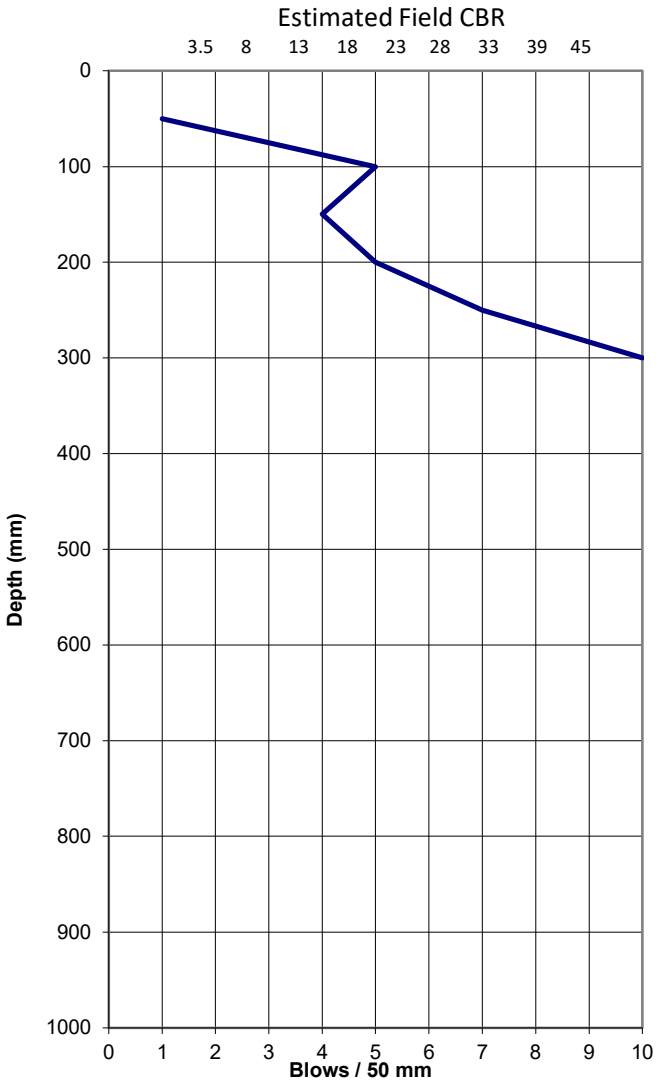
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***322***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*5*
150	*4*
200	*5*
250	*7*
300	*10*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

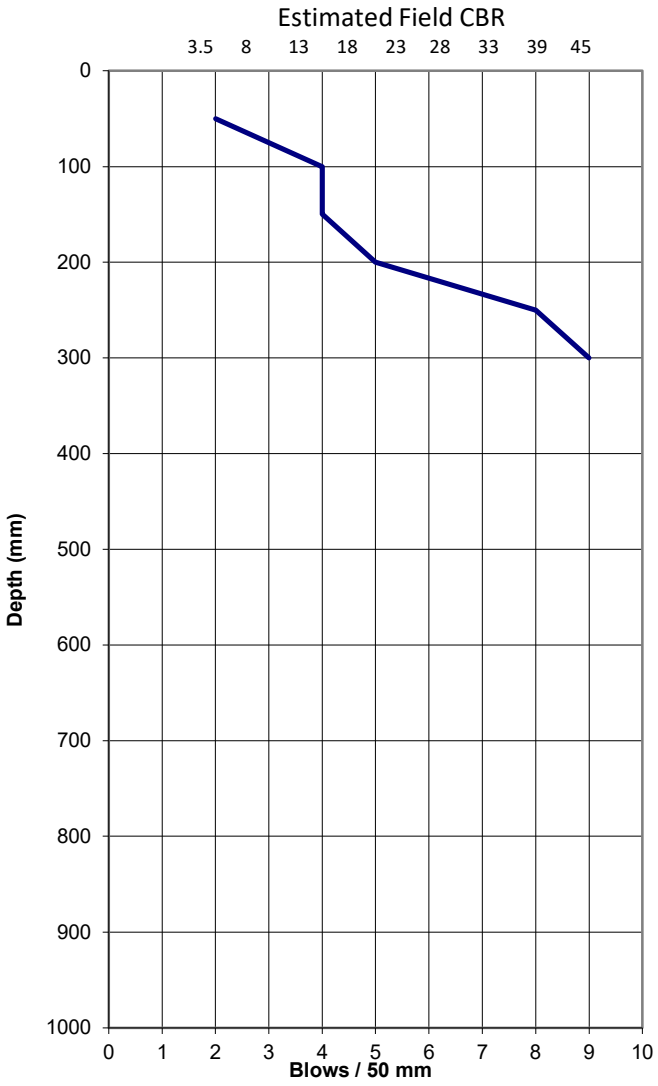
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***323***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*4*
150	*4*
200	*5*
250	*8*
300	*9*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

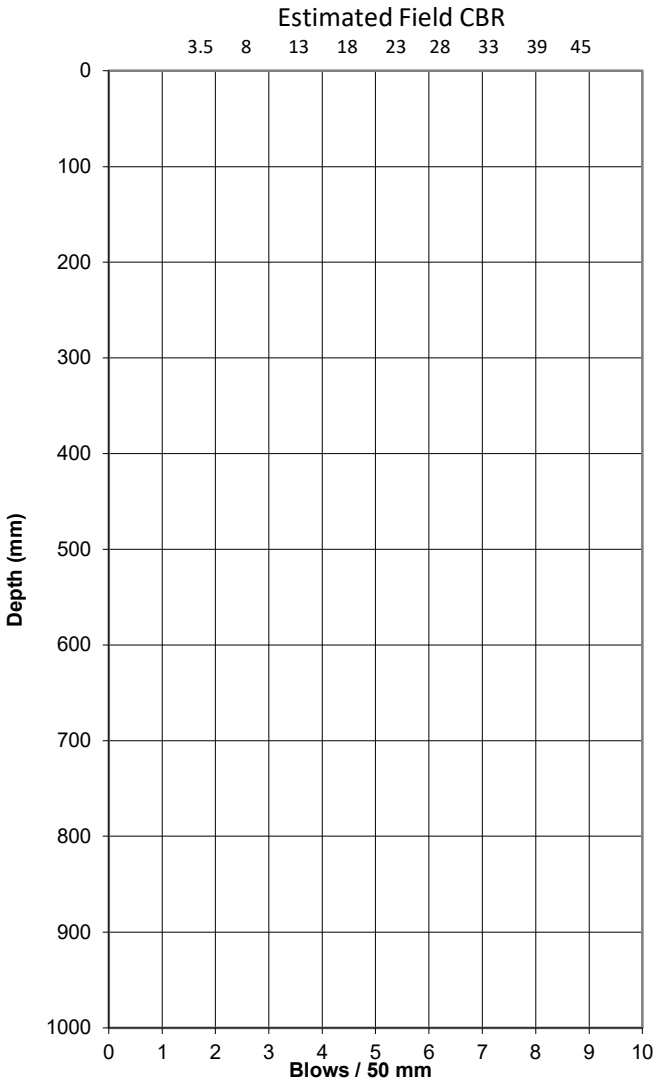
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***324***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*11*
100	
150	
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

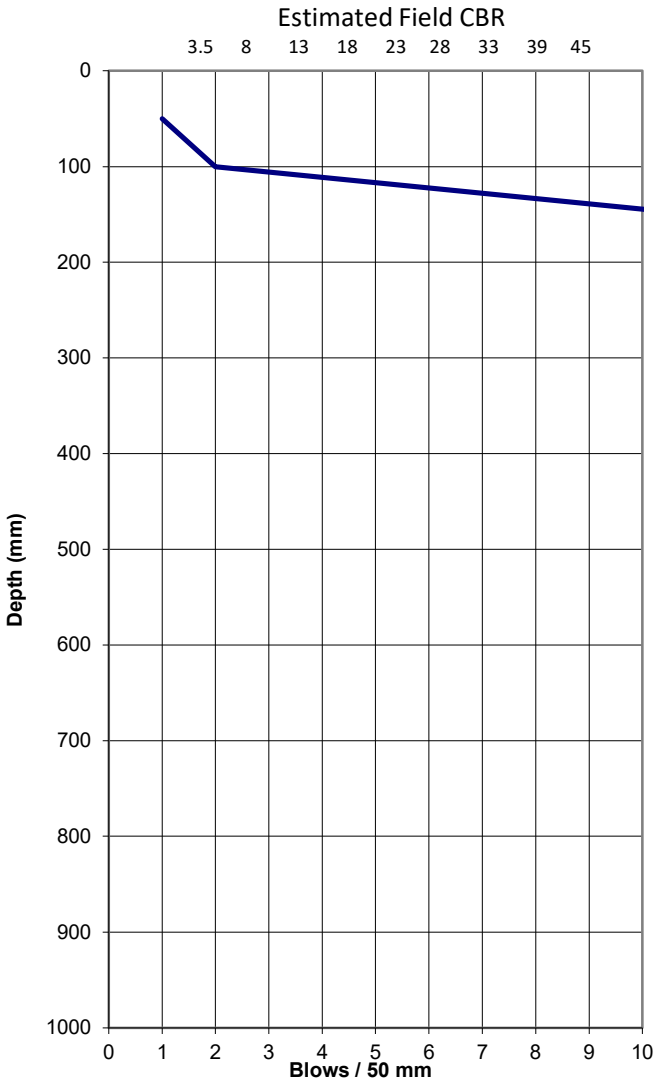
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***325***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*2*
150	*11*
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

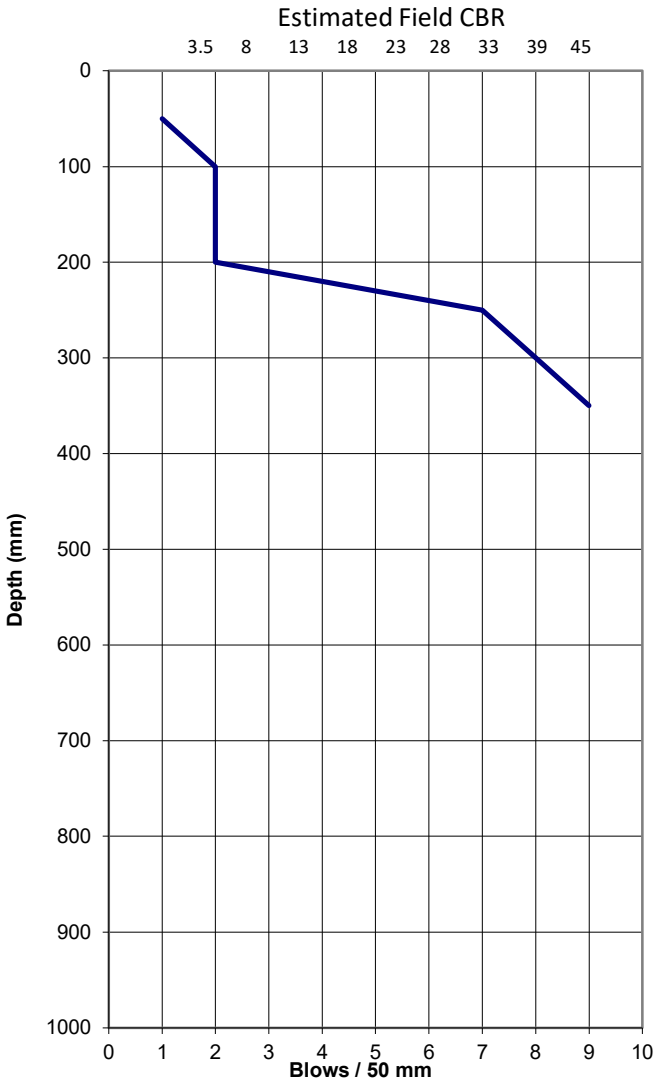
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***326***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*2*
150	*2*
200	*2*
250	*7*
300	*8*
350	*9*
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

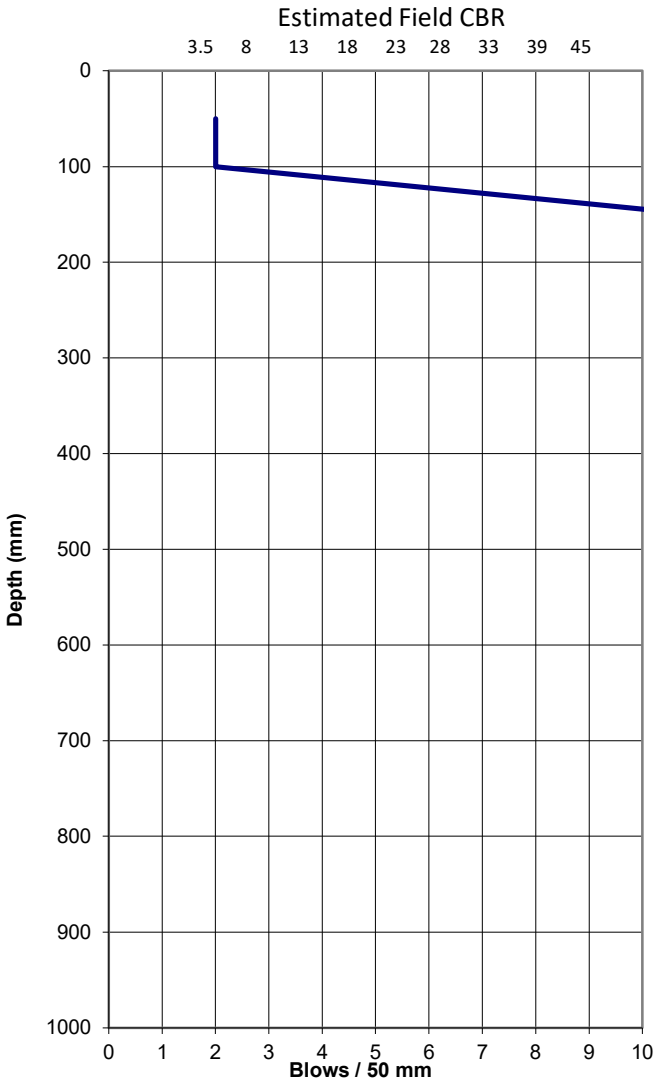
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***327***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*2*
150	*11*
200	
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

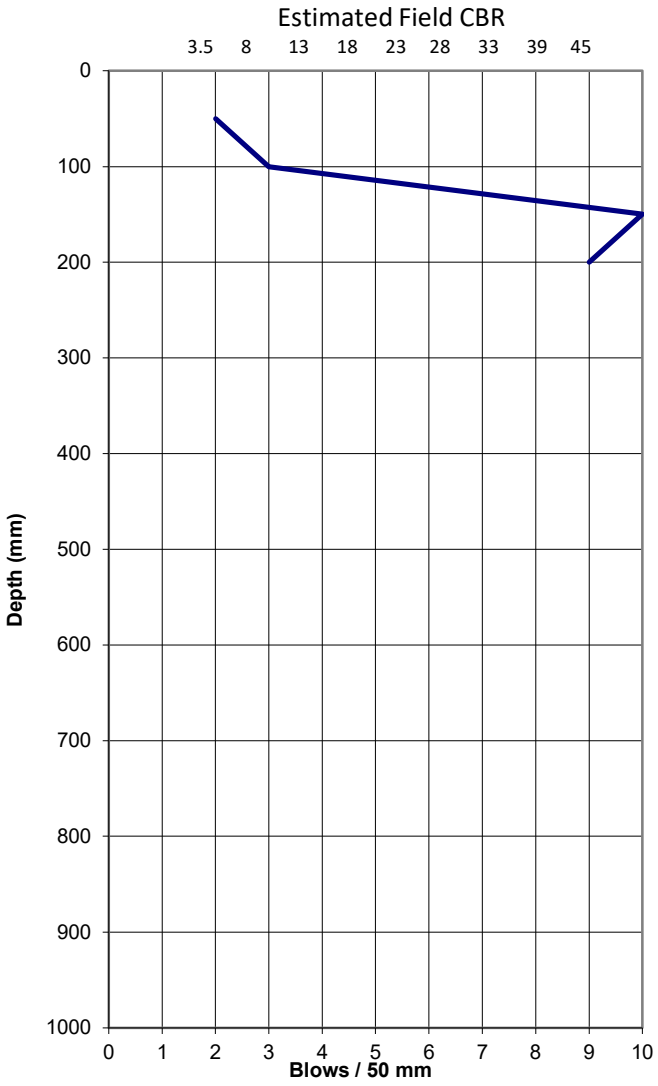
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***328***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*3*
150	*10*
200	*9*
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

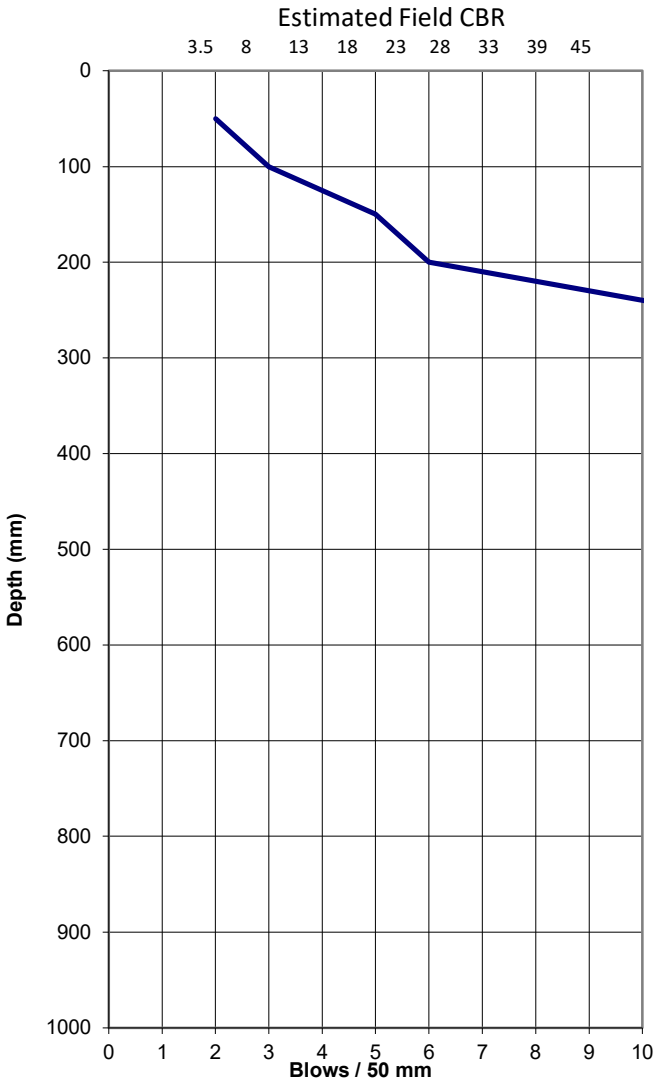
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***329***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*3*
150	*5*
200	*6*
250	*11*
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

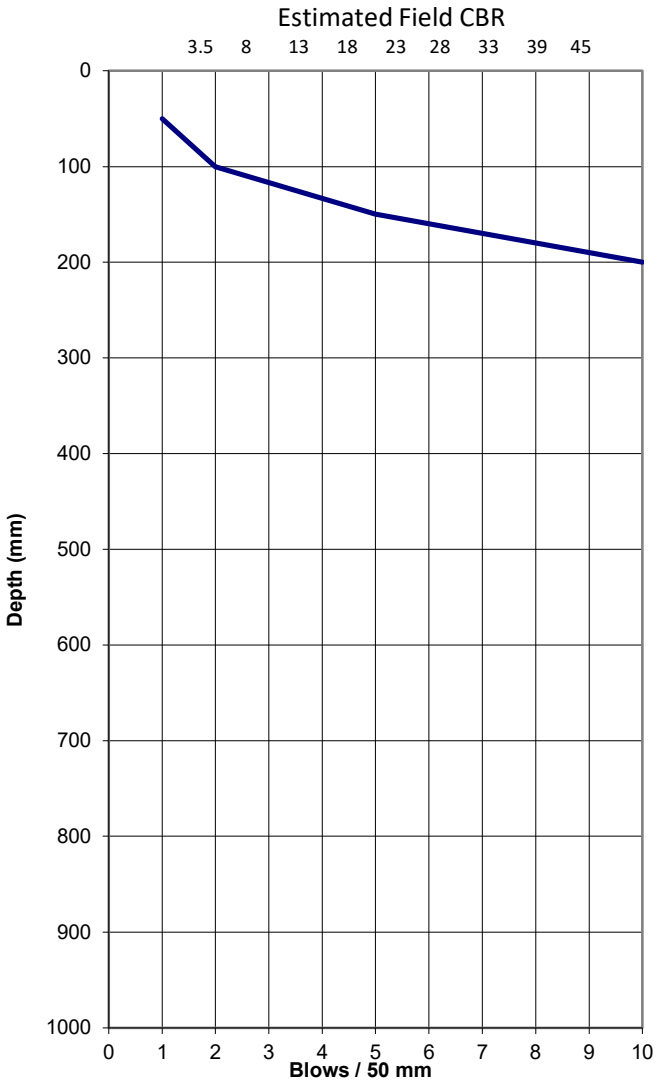
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***330***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*2*
150	*5*
200	*10*
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

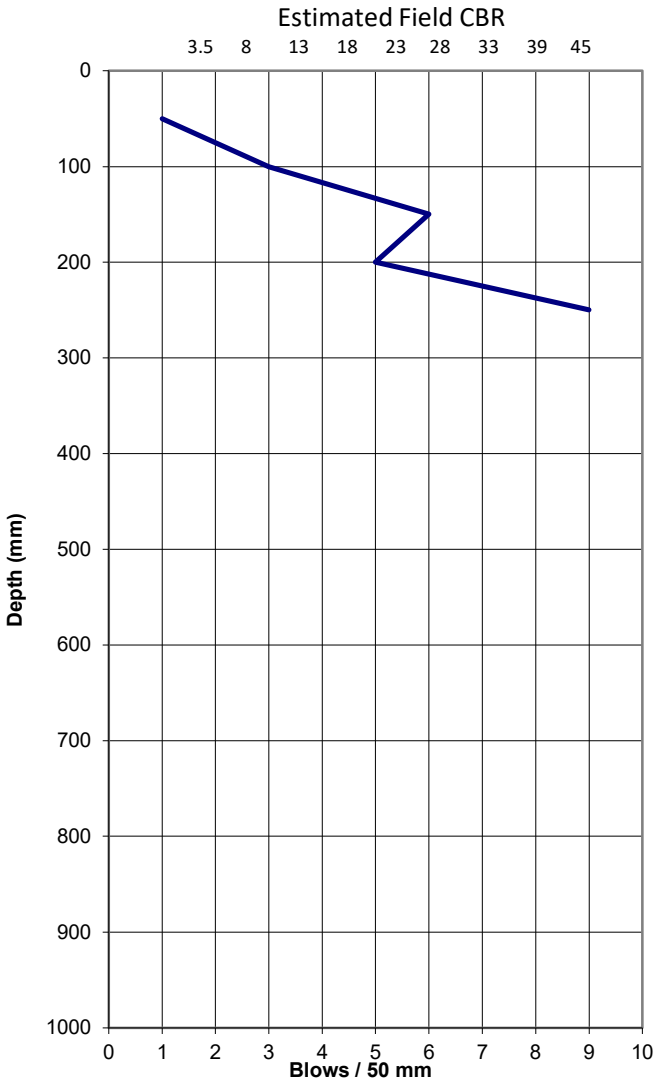
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***331***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*3*
150	*6*
200	*5*
250	*9*
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

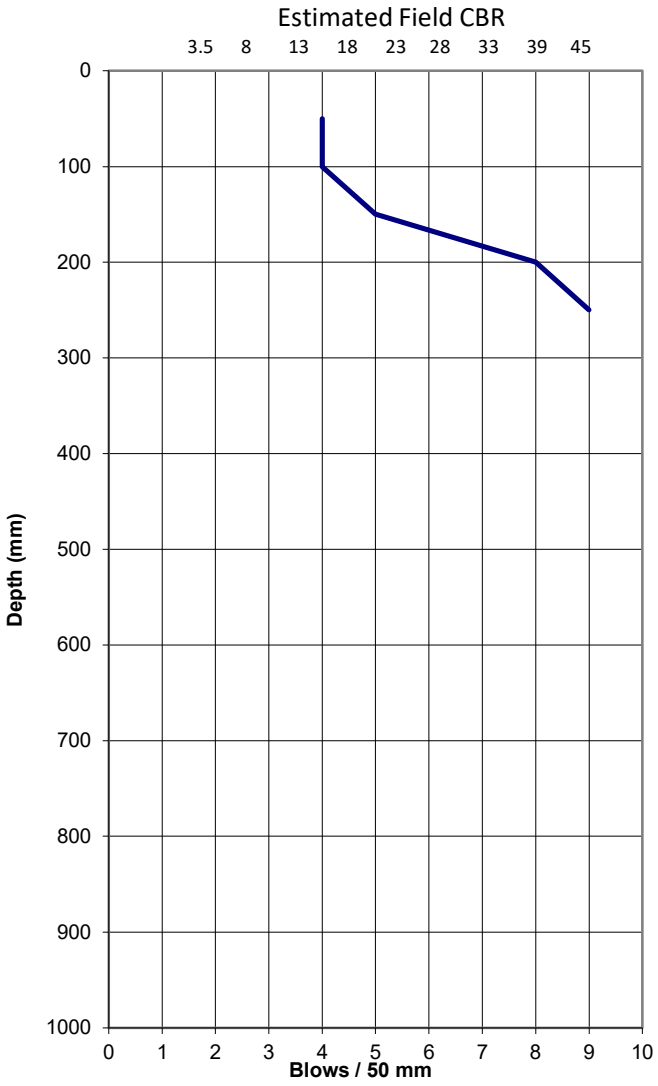
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***332***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*4*
100	*4*
150	*5*
200	*8*
250	*9*
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

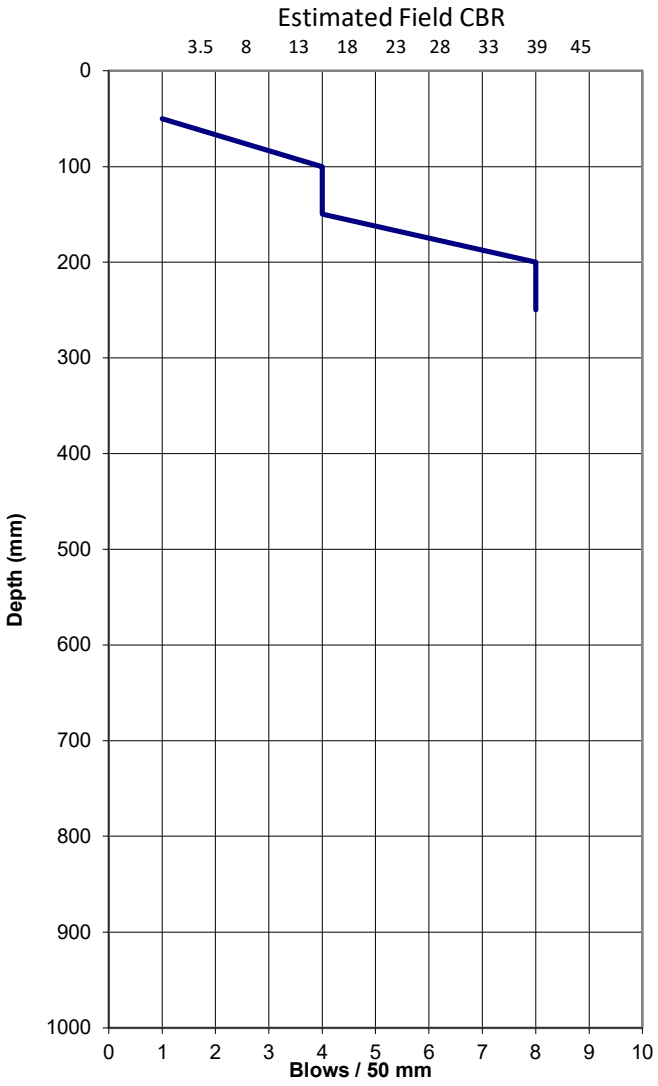
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***333***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*4*
150	*4*
200	*8*
250	*8*
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

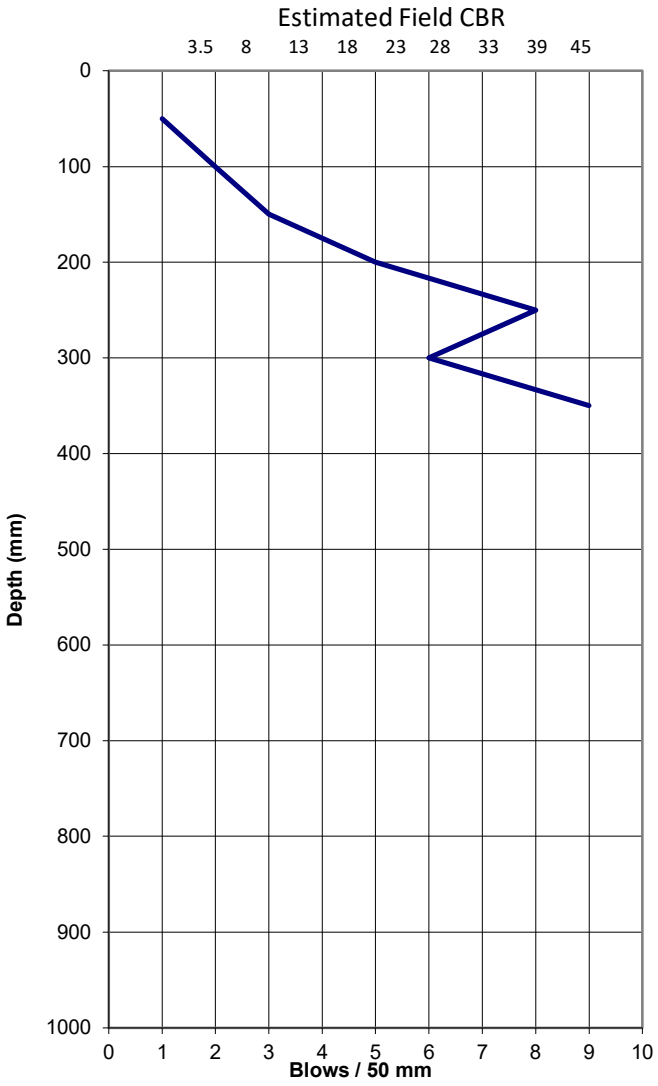
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***334***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*2*
150	*3*
200	*5*
250	*8*
300	*6*
350	*9*
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***335***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*3*
150	*4*
200	*7*
250	*7*
300	*9*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	

Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

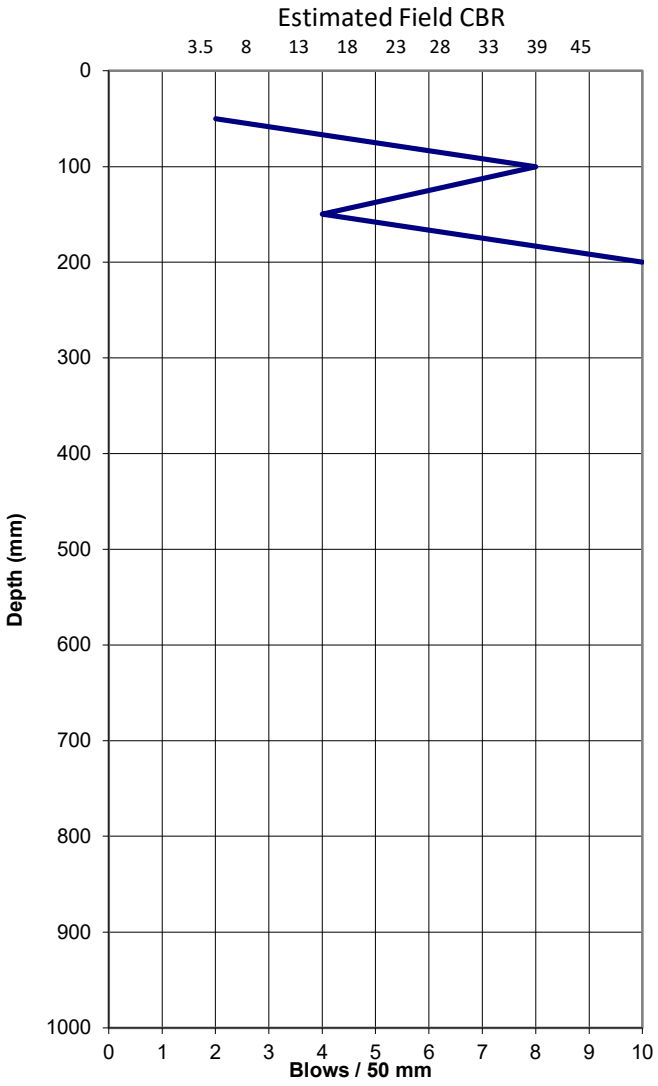
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***337***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*8*
150	*4*
200	*10*
250	
300	
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***338***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*2*
100	*3*
150	*5*
200	*4*
250	*6*
300	*11*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	

Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***339***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*5*
100	*3*
150	*7*
200	*5*
250	*6*
300	*10*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	

Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

Tonkin + Taylor

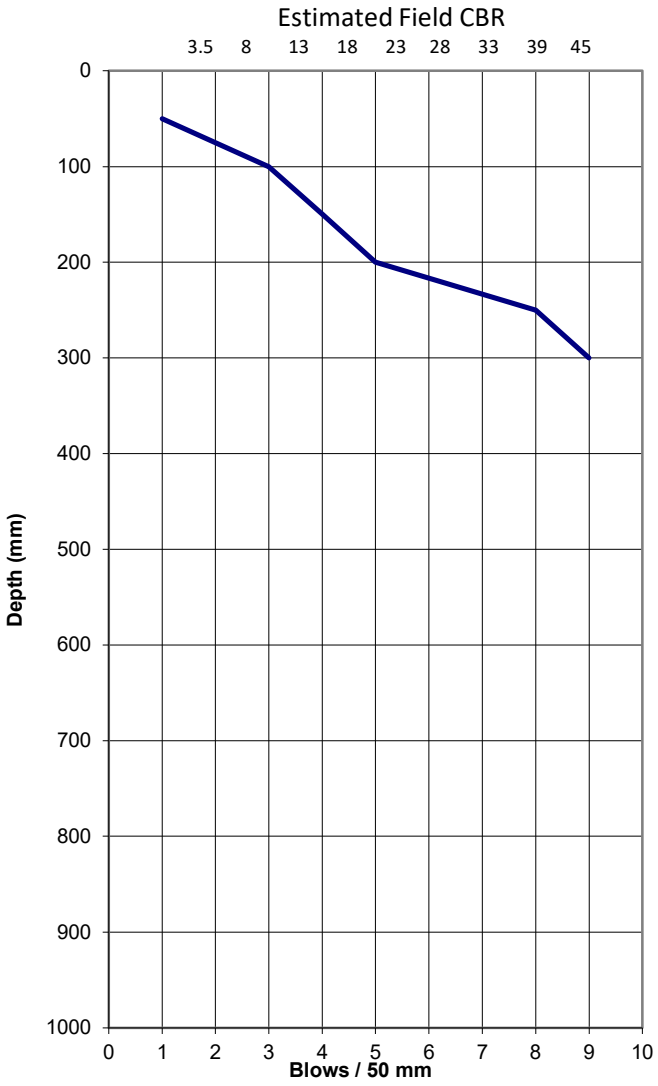
SCALA PENETROMETER LOG

Job No: *53246.9000*
Project: *Beach Grove Stage 6A*
Location: *Beach Grove , Kaiapoi*
RL: *Unknown*

Date: *21/03/2024*
Operated by: *LWICKS*
Logged by: *LWICKS*
Checked by: *HATI*

Test No. ***340***
Sheet ***1***
of ***1***

mm Driven	No. of Blows
50	*1*
100	*3*
150	*4*
200	*5*
250	*8*
300	*9*
350	
400	
450	
500	
550	
600	
650	
700	
750	
800	
850	
900	
950	
1000	



Note: The estimated CBR values are based upon Fig. 5, Correlation of Dynamic Cone Penetration and CBR AUSTROADS (1992) 'Pavement Design - A Guide to the Structural Design of Road Pavements'

Test Method Used: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer