

# DRAWING SET INDEX

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AUCKLAND TRANSPORT  
CODE OF PRACTICE

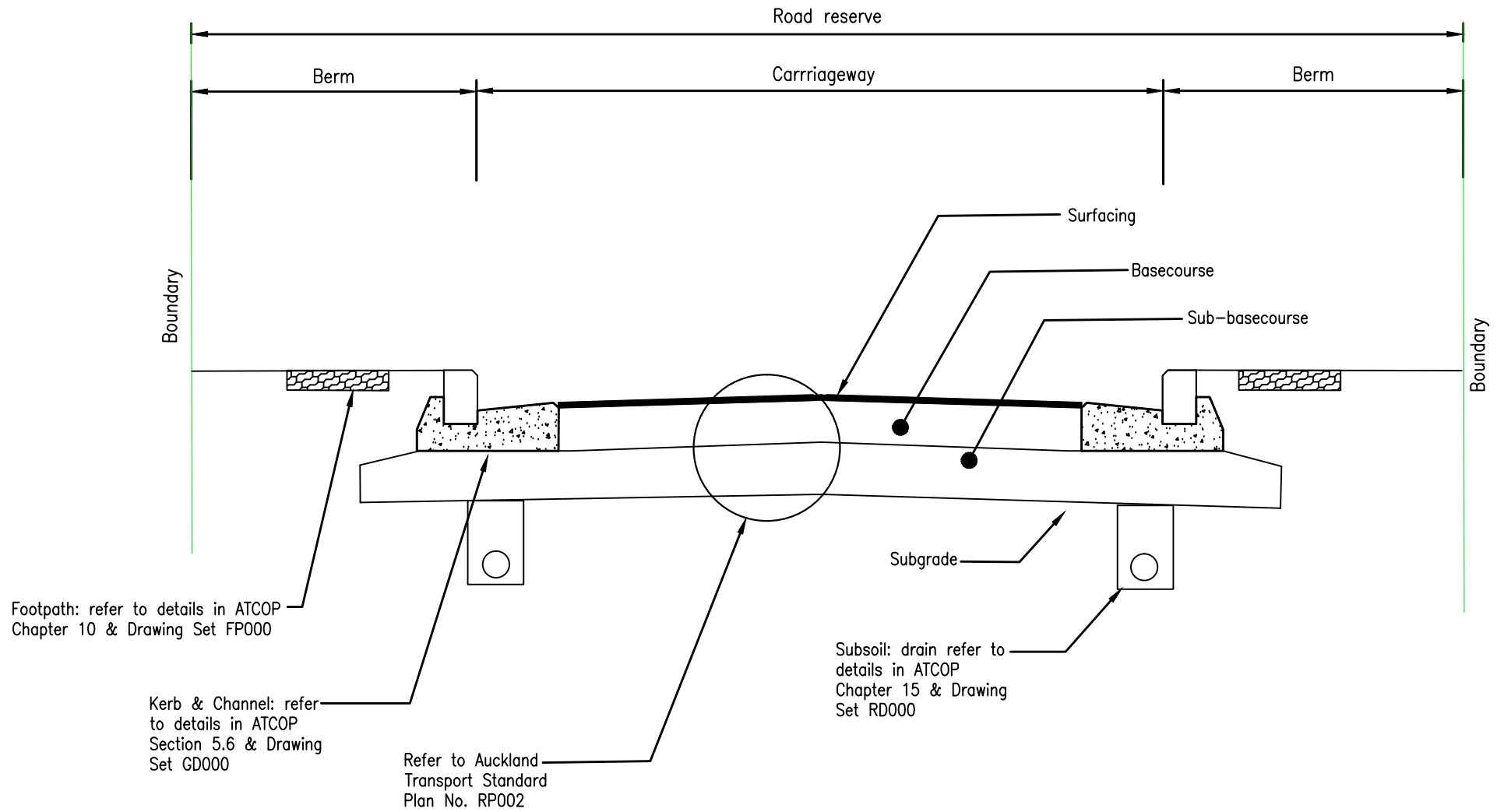
TITLE

**ROAD PAVEMENT  
DRAWING INDEX**

SCALE:

DRAWING No.  
RP000

VERSION 1.0



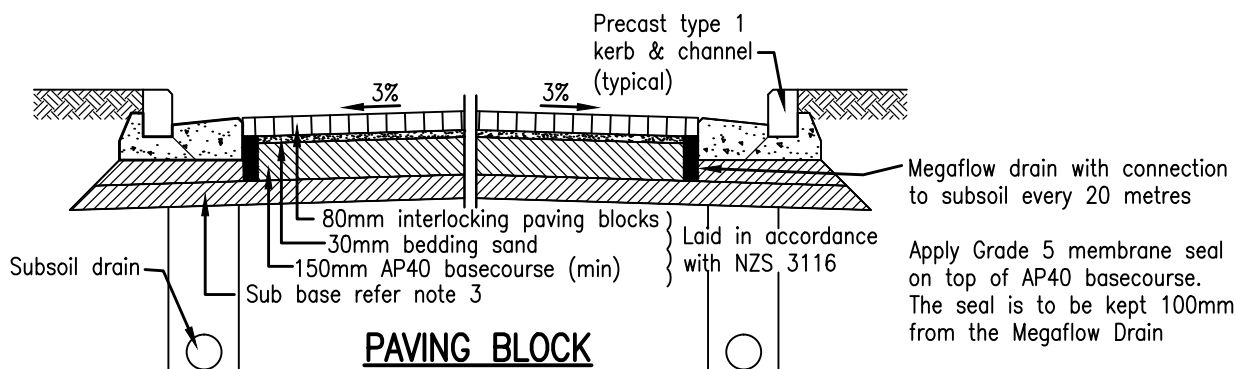
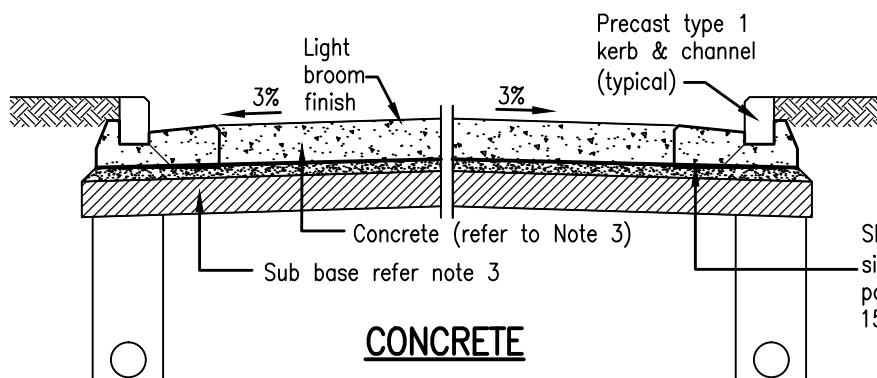
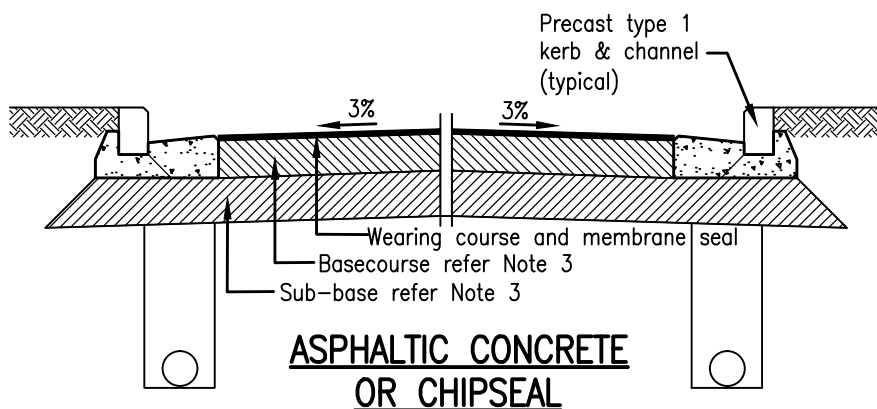
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AUCKLAND TRANSPORT  
CODE OF PRACTICE

TITLE  
**TYPICAL CARRIAGEWAY X-SECTION**

SCALE:	N.T.S.
DRAWING No.	RP001
VERSION	1.0



**NOTES**

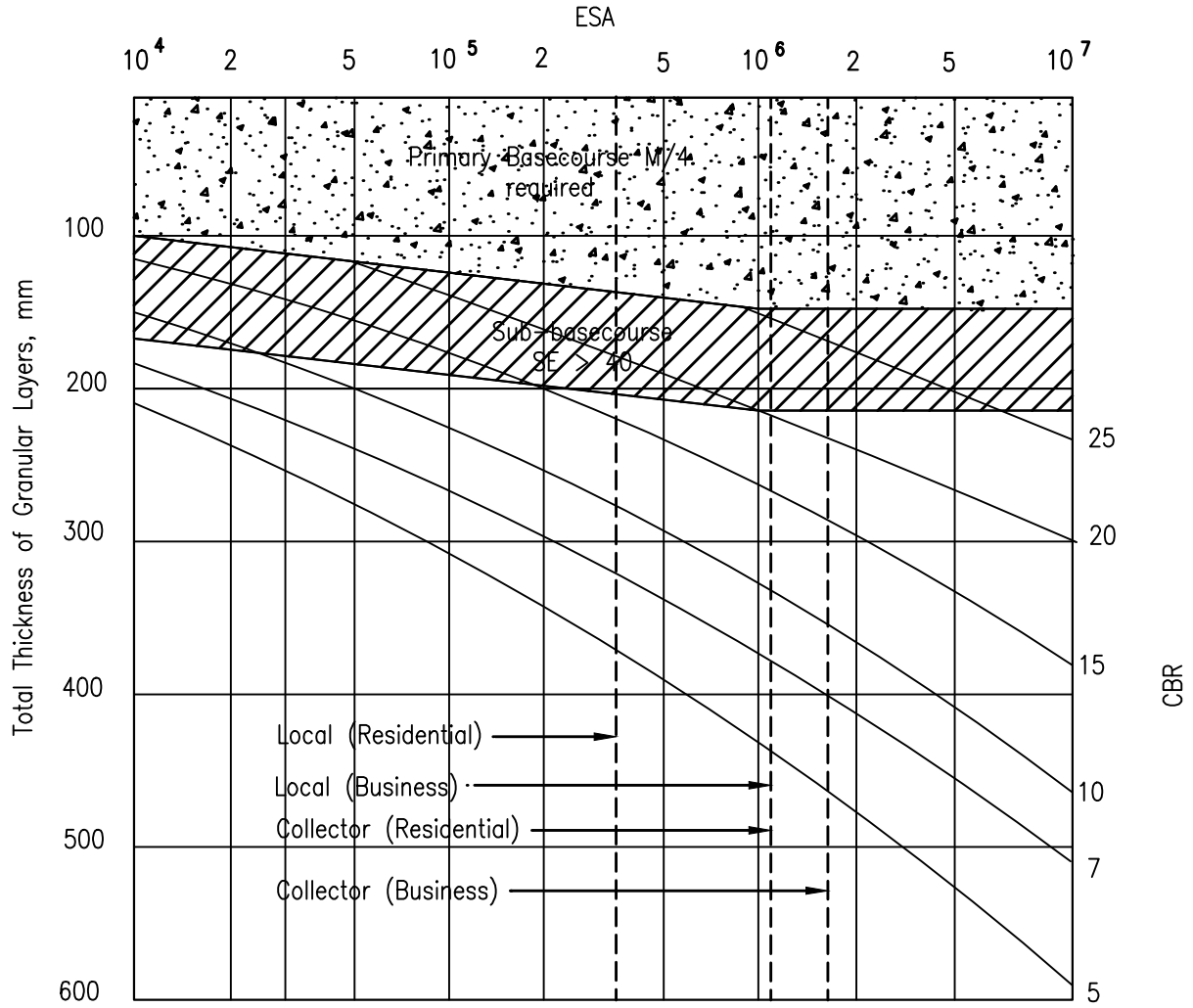
1. For concrete pavements, transverse contraction and longitudinal joints are to be designed and constructed to control cracking.
2. All Kerb & Channels are to be drained to a catchpit and connected to a drainage system.
3. Pavement thickness to be determined by the relevant AT Engineer in accordance with Austroads – Guide to Pavement Technology Part 2 Pavement Structural Design and the latest New Zealand Transport Agency Supplement.

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AUCKLAND TRANSPORT CODE OF PRACTICE	
TITLE	<b>URBAN ROADING TYPICAL CROSS SECTION</b>

SCALE:	N.T.S.
DRAWING No.	RP002
VERSION	1.0



Road Type	Max Deflection (mm) *		Min B/C Depth	Max longitudinal grade
	AC	CHIPSEAL		
Local (Residential)	1.2	1.5	100	10%
Local (Business)	1.0	1.0	150	5%
Collector (Residential)	1.0	1.0	150	8%
Collector (Business)	1.0	1.0	150	5%
Arterial	Austroads- A Guide to Pavement Technology Part 2. Pavement Structural Design and the New Zealand Transport Agency Supplement			

\* 95 percentile Benkleman Beam

REVISION	BY	DATE



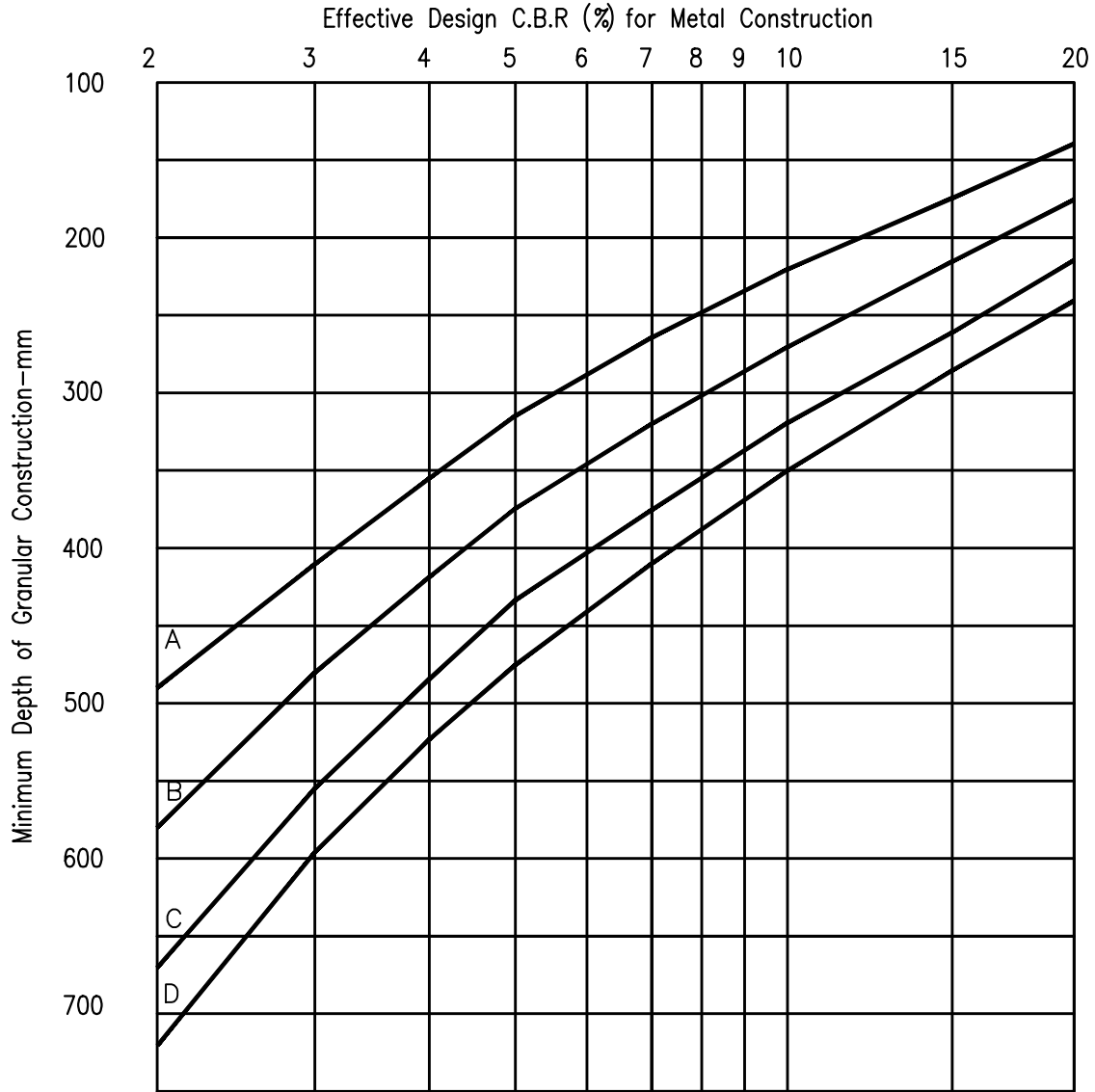
AUCKLAND TRANSPORT  
CODE OF PRACTICE

TITLE  
**TYPICAL GRANULAR  
UNBOUND PAVEMENT DESIGN  
CBR METHOD**

SCALE:  
N.T.S.

DRAWING No.  
RP003

VERSION  
1.0



\* 95% Benkleman Beam

	ROAD TYPE	C/W WIDTHS	MAX. ALLOWABLE DEFLECTIONS 8.2t*	MAXIMUM ALLOWABLE GRADIENT	MIN. DEPTH OF BASECOURSE
A	Cul-de-sac (Residential)	5.4m	1.5mm	10%	100mm
B	Local Road (Residential)	7.8m	1.2mm	10%	150mm
C	Collector Road	10.8m	1.0mm	8%	150mm
D	Local Road (Business)	12.2m	1.0mm	5%	150mm
E	Arterial Rd	Austroads – Guide to pavement Technology Part 2, Pavement Structural Design and the New Zealand Transport Agency Supplement			

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CODE OF PRACTICE

TITLE

**C.B.R. PAVEMENT  
DESIGN CHART**

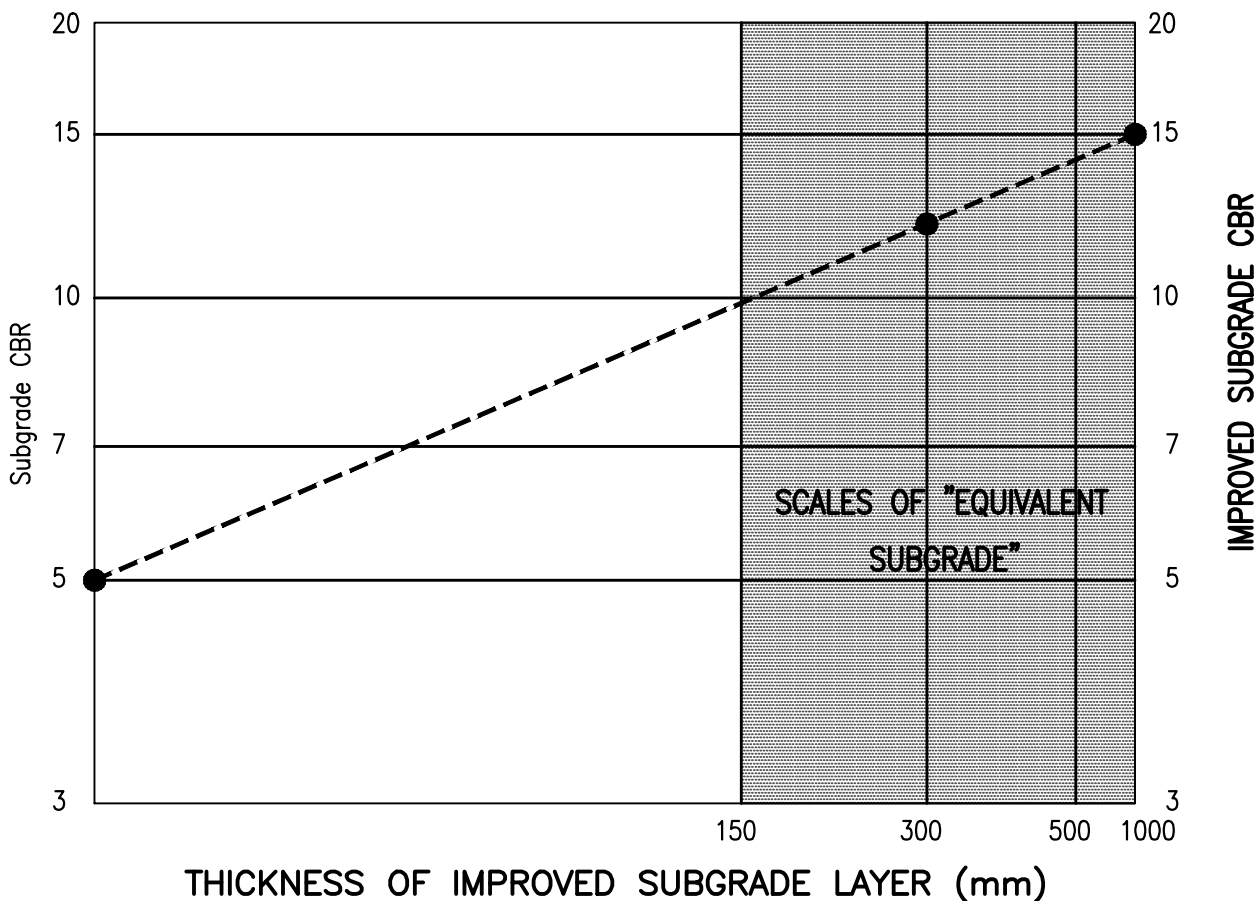
SCALE:  
N.T.S.

DRAWING No.  
RP004

VERSION 1.0

Example:

Subgrade of CBR 5 will be overlaid by 300mm layer of CBR 15 material. Using the methodology below, the equivalent CBR used to represent the two subgrade layers for the design of the pavement is a CBR of 12.



**NOMOGRAPH FOR DETERMINING THE EFFECT OF SUBGRADE IMPROVEMENT LAYERS (GRANULAR OR STABILIZED SUBGRADE IMPROVEMENT)**

Methodology:

To use this nomograph:

1. Plot the improved subgrade on the right hand side axis and the underlying design subgrade on the left hand side axis.
2. Join these two points for an inclined line.
3. Rule a vertical line for the desired thickness of the improved subgrade layer from the base axis.
4. Where the two lines intersect is the equivalent subgrade strength.

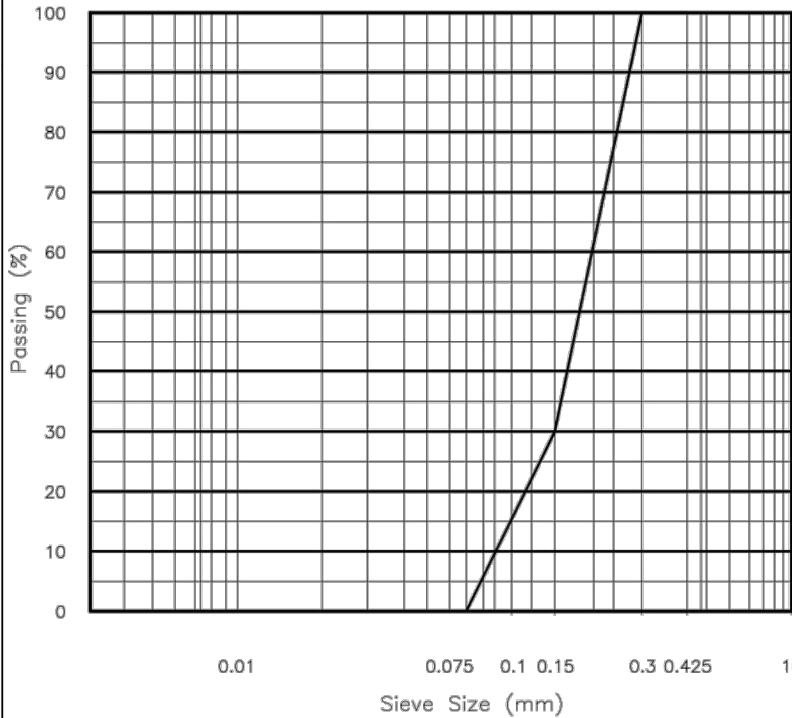
REVISION	BY	DATE



AUCKLAND TRANSPORT CODE OF PRACTICE	
TITLE	<b>EQUIVALENT SUBGRADE DESIGN CHART</b>

SCALE:	N.T.S.
DRAWING No.	RP005
VERSION	1.0

### GRADING ENVELOPE



**Notes:**

1. This approval is for Woodhill sand as supplied by Winstone Aggregates Ltd.
2. The sand shall be a fine grained silty black sand without a clay fraction.
3. Properties of sample tested on 16 March, 1995.

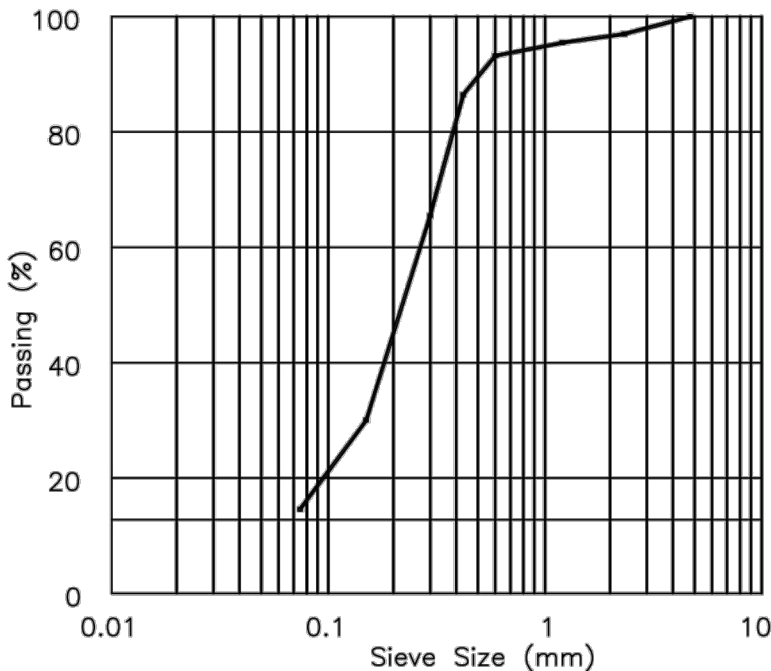
Grading:

SIEVE SIZE (um)	PERCENTAGE PASSING
425	100
300	99
150	32
75	0

4. CBR: 50% at max, Density of 1.9t/m (to ASTM D2049-69), Permeability: Average  $1.337 \times 10^{-6}$  m/sec to BS1377.

### WOODHILL SAND

### GRADING ENVELOPE



**Notes:**

1. This product is an alternative to Woodhill sand.
2. Properties of sample tested on 20 October 2004:

SIEVE SIZE (mm)	PERCENTAGE PASSING
4.750	100
2.360	97
1.180	95
0.600	93
0.425	86
0.300	65
0.150	30
0.075	13

3. CBR is 60% and tested methods are:  
 Particle Size Distribution, NZS3111:1986:Test6.  
 CBR, NZS4407:1991:Test 3.15.  
 Water Content, NZS4407:1991:Test 3.15.  
 Compaction, NZS4402:1986:Method 4.1.3 (Vibratory).

### EXCELSIOR SAND

REVISION	BY	DATE



AUCKLAND TRANSPORT  
CODE OF PRACTICE

TITLE     SAND FOR USE IN  
REPLACEMENT OF UNDERCUTS  
IN ROADWORKS

SCALE:	N.T.S.
DRAWING No.	RP006
VERSION	1.0