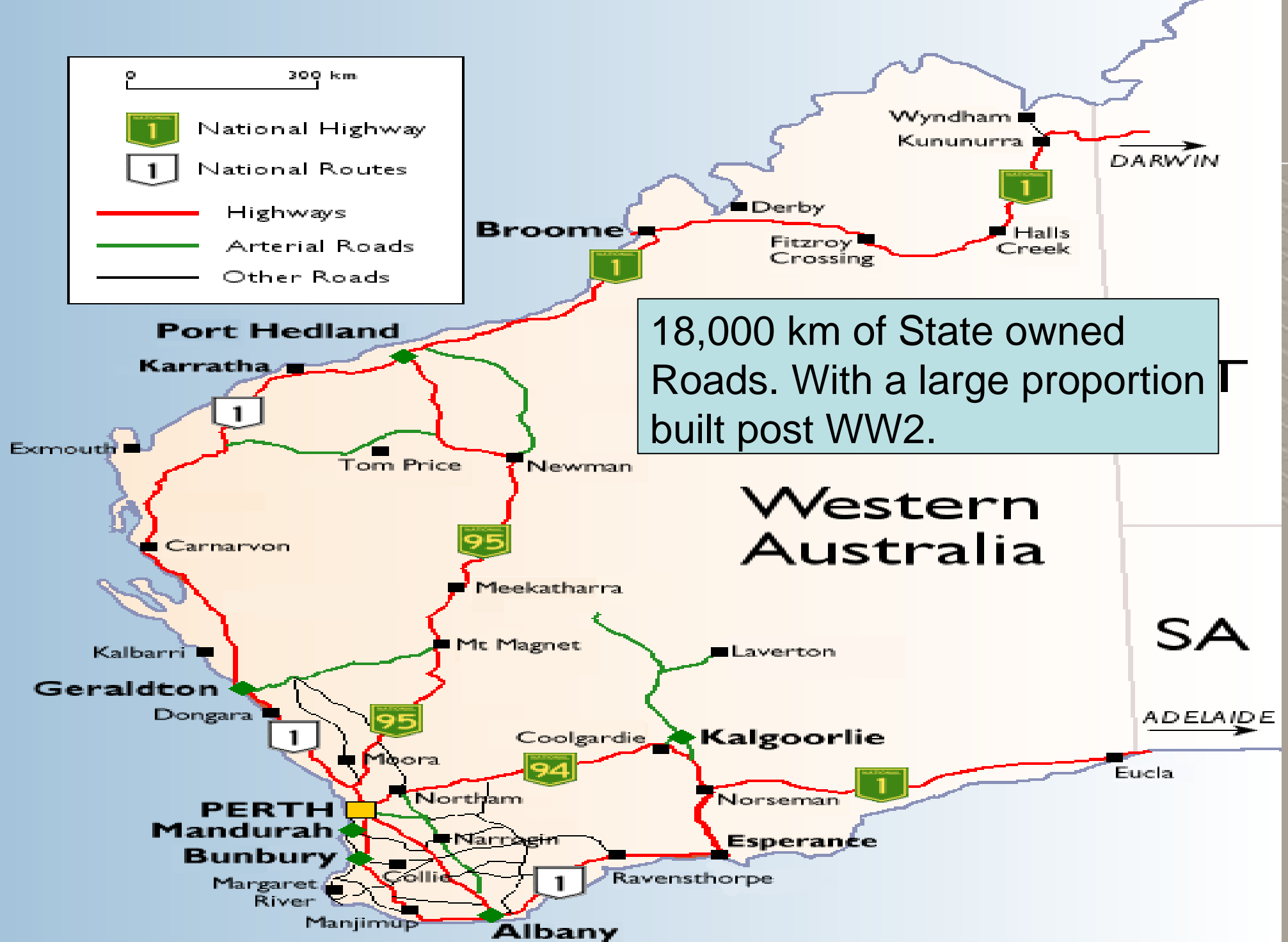




# Geotextile Reinforced Seals – The Western Australian Coming of Age

**Garnet Gregory**  
**Main Roads Western Australia**





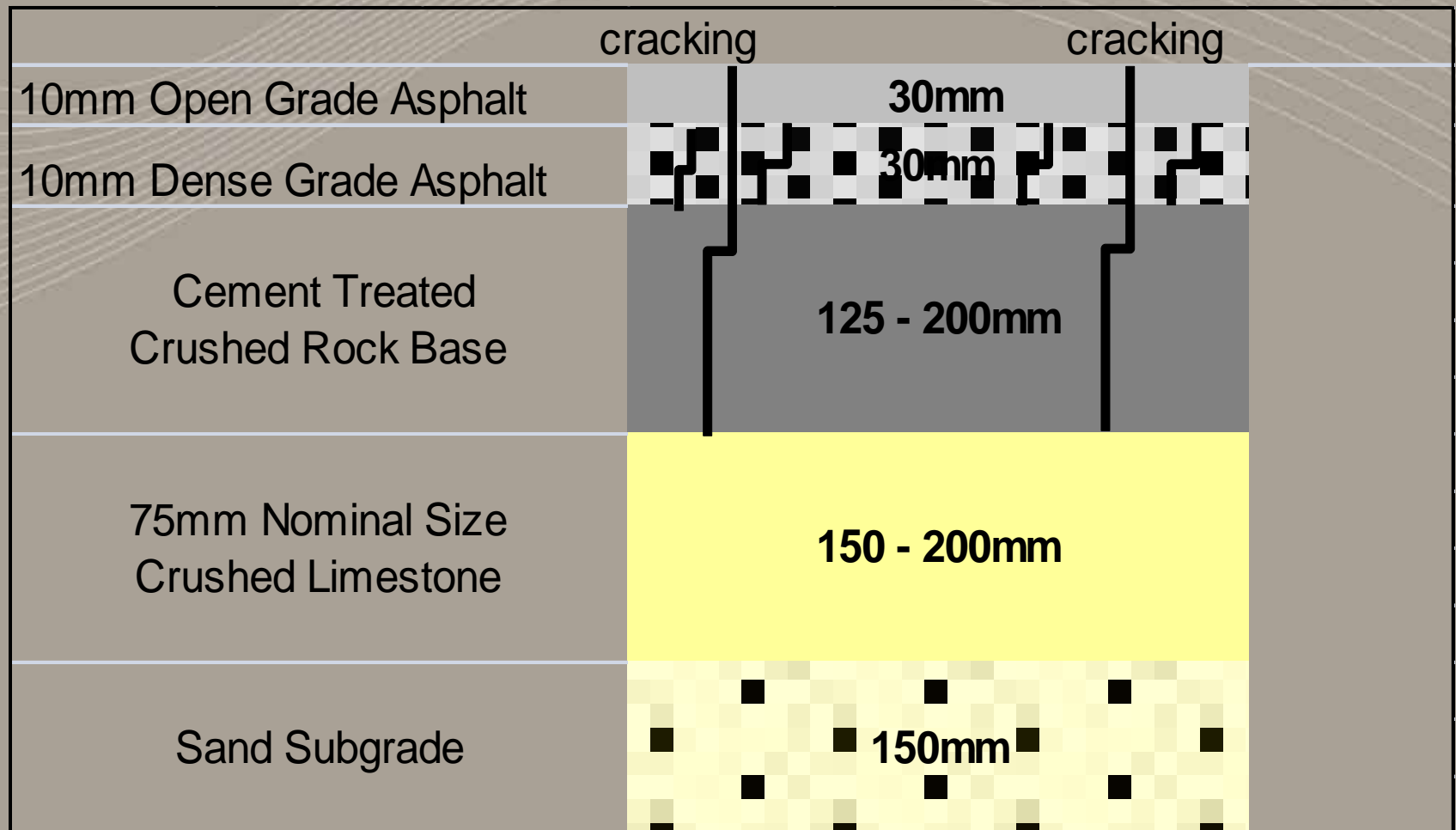
## The Problem Pavement





# GRS Used as a SAMI

## The Problem Pavement







# GRS Used as a SAMI

## Cold Planing



## DRUM SELECTION FOR COLD PLANING

**15mm DRUM**

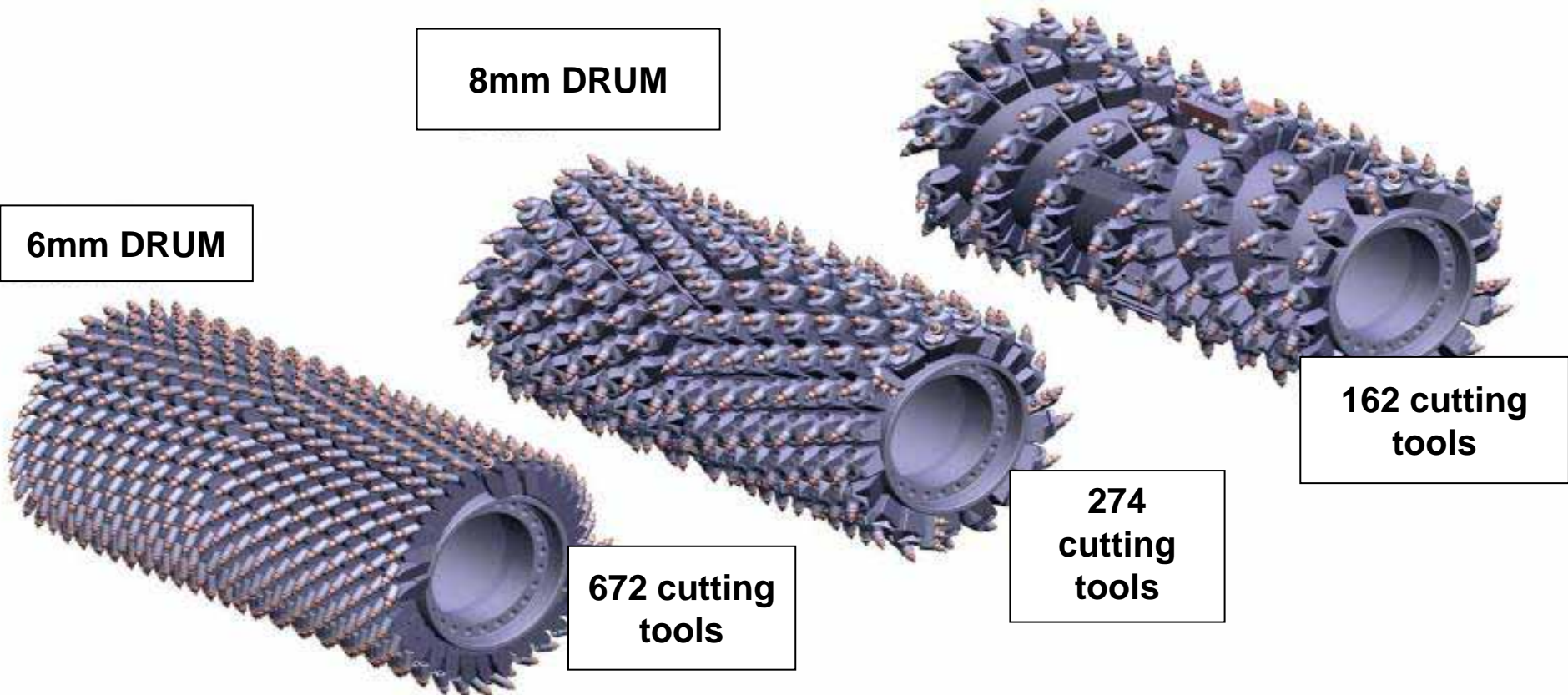
**8mm DRUM**

**6mm DRUM**

**162 cutting tools**

**274 cutting tools**

**672 cutting tools**





## Cold Planing Specification

Type of Drum	Tool Spacing on Drum	Type of Work
Fine	Maximum 8 mm	<b>TYPE 1</b> <ul style="list-style-type: none"><li>Where a SAMI or GRS seal is to be applied to the cold planed surface</li><li>Bridge Deck resurfacing</li></ul>
Fine	Maximum 8 mm	<b>TYPE 2</b> <ul style="list-style-type: none"><li>Milling to retexture a road surface</li><li>Removal of surface defects such as shoving</li></ul>
Standard	15 mm	<b>TYPE 3</b> <ul style="list-style-type: none"><li>Asphalt without an underlying seal</li><li>Other applications not requiring a fine drum</li></ul>





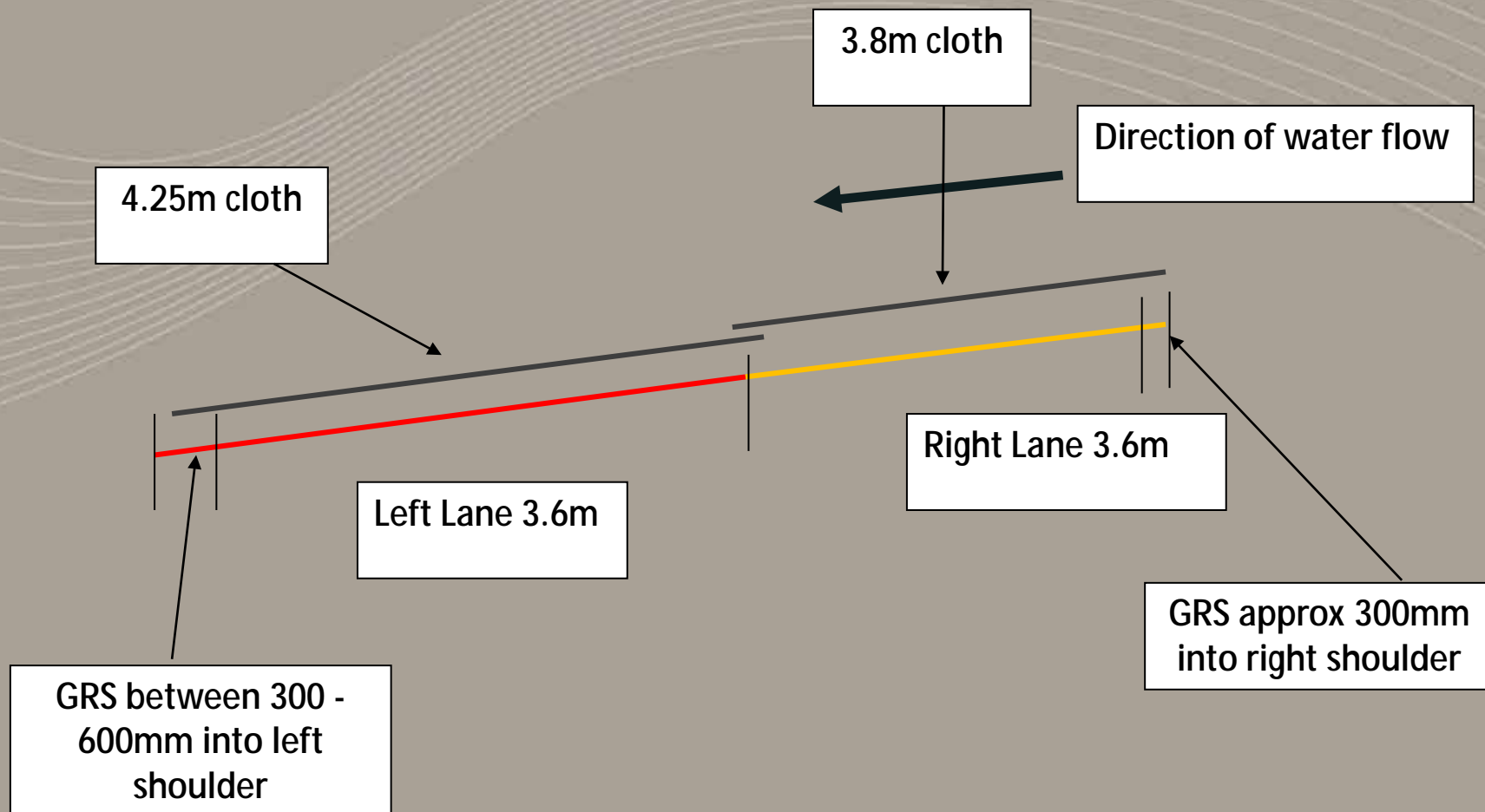
## Geotextile Specification

Test Property	Test Method	Limits	
		Light Grade Fabric	Heavy Grade Fabric
Wide strip tensile strength (kN/m)	AS 3706.2	$\geq 6.0$	$\geq 9.0$
Mass per unit area (g/m <sup>2</sup> )	AS 3706.1	130 - 160	170 - 200
Maximum Elongation (%)	AS 3706.2	40 – 60	40 - 60
UV Stabilisation - Retained Strength	AS 3706.11	At least 50% after 672 hours of exposure	At least 50% after 672 hours of exposure
Melting Point (°C)	ASTM D276	$\geq 200$	$\geq 200$
Bitumen Retention (loaded) Note 1 (L/m <sup>2</sup> )	ASTM D6140	$\geq 0.9$	$\geq 1.1$
Thickness (mm)	AS 3706.1	1.2 – 1.6	1.6 – 2.0





## Geotextile Orientation





# GRS Used as a SAMI

## GRS Specification

The design of the GRS when used as a SAMI seal is as follows:

Bitumen Application Rate (BAR) for Class 170 Bitumen calculated at 15°C.

Bond Coat	1.1L/m <sup>2</sup>
1 <sup>st</sup> Coat (14mm)	1.7L/m <sup>2</sup>
2 <sup>nd</sup> Coat (7mm)	0.7L/m <sup>2</sup>
<b>Total binder</b>	<b>3.5L/m<sup>2</sup></b>

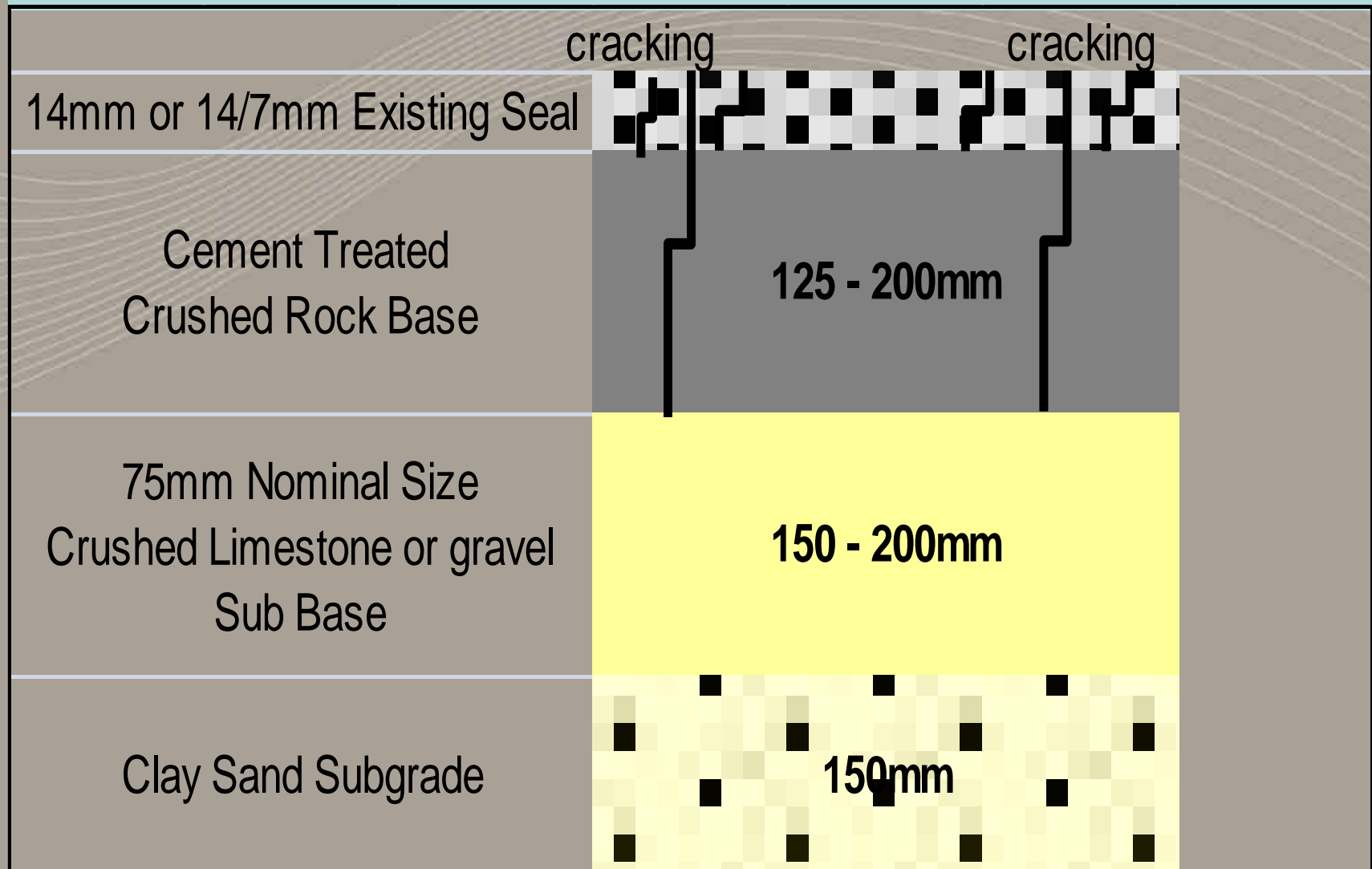
Aggregate spread rates

14mm – 100m<sup>2</sup>/m<sup>3</sup>

7mm - 250 m<sup>2</sup>/m<sup>3</sup>

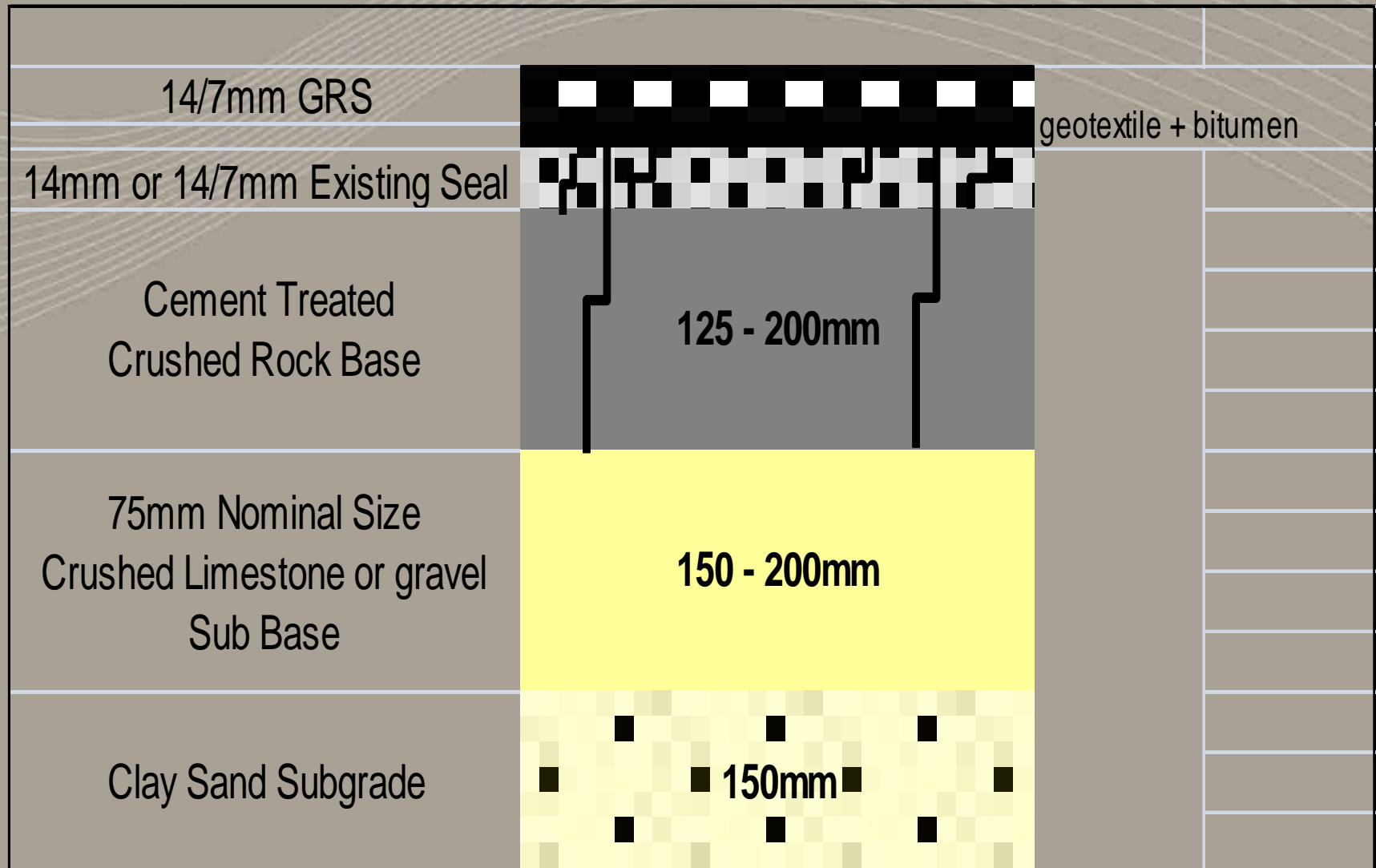


## The Problem Pavement





## The Remedy







## GRS Used as a SAM

### GRS Specification

Typical GRS BAR Design used as a SAM are:

Class 170 Bitumen calculated at 15°C.

#### **SLOW LANE**

Bond Coat	0.9L/m <sup>2</sup>
1 <sup>st</sup> Coat (14mm)	1.2L/m <sup>2</sup>
2 <sup>nd</sup> Coat (7mm)	0.7L/m <sup>2</sup>
<b>Total Binder</b>	<b>2.8L/m<sup>2</sup></b>

#### **FAST LANE**

Bond Coat	0.9L/m <sup>2</sup>
1 <sup>st</sup> Coat (14mm)	1.4L/m <sup>2</sup>
2 <sup>nd</sup> Coat (7mm)	0.7L/m <sup>2</sup>
<b>Total Binder</b>	<b>3.0L/m<sup>2</sup></b>

**Aggregate spread rates:**

14mm – 100m<sup>2</sup>/m<sup>3</sup>

7mm - 250 m<sup>2</sup>/m<sup>3</sup>



## GRS Used as a SAM

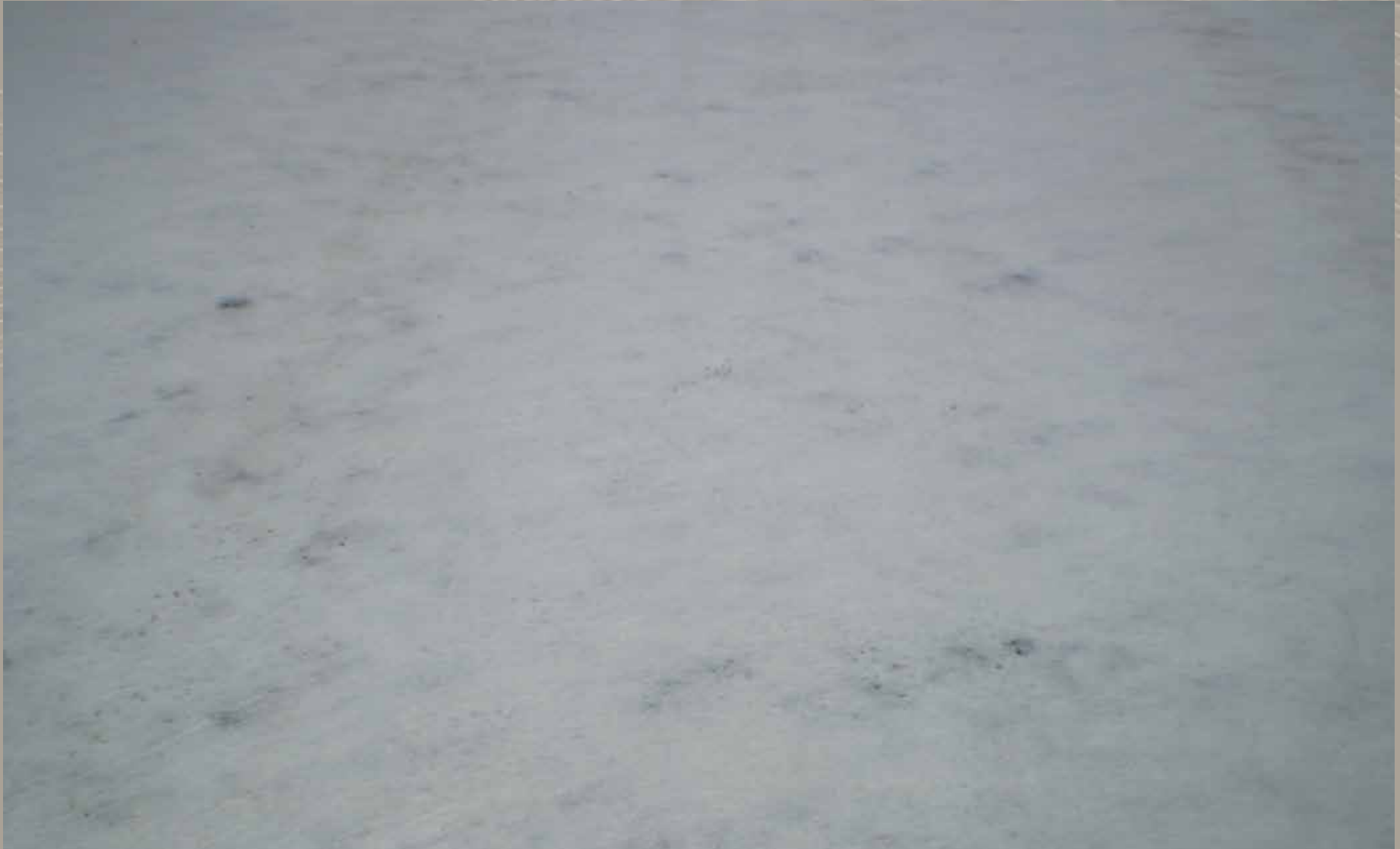
### GRS Placement in Hot Weather





## GRS Used as a SAM

### GRS Placement in Hot Weather







## GRS Used as a SAM

### GRS Placement in Hot Weather





## GRS Placement in Hot Weather





# GRS Used as a SAM

## GRS Placement in Hot Weather







## GRS Used as a SAM

### GRS Placement in Hot Weather



## GRS Placement in Hot Weather







# GRS Used as a SAMI

## Where Not to Place GRS







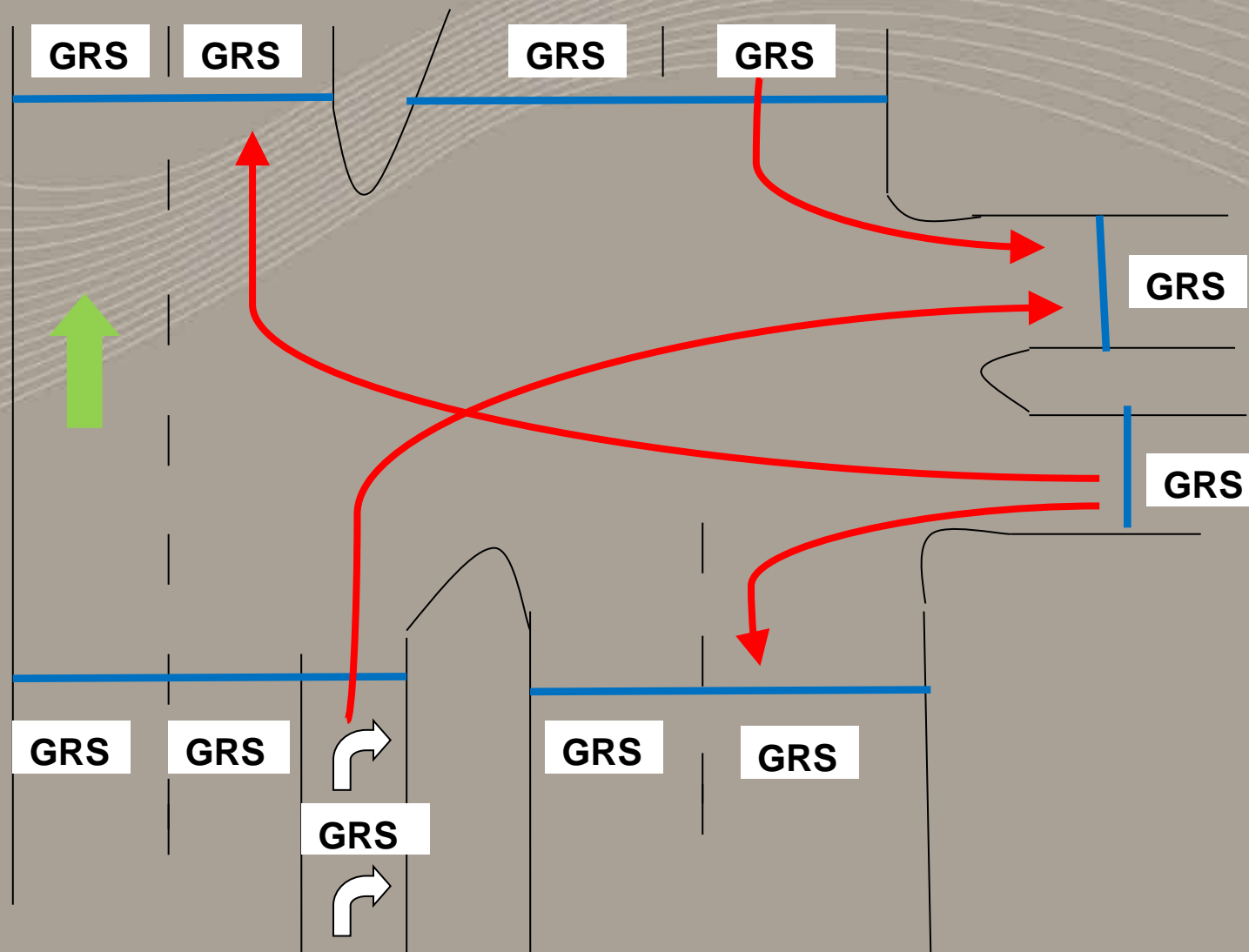
# GRS Used as a SAM

## Where Not to Place GRS





## Where Not to Place GRS





## THINGS TO AVOID







## THINGS TO AVOID

A close-up photograph of a gravel road surface, showing a mix of dark and light-colored stones and some patches of lighter material.

THANKYOU