
Typically, the residual black soil subgrade exhibits the following material characteristics:

- Linear Shrinkage 12 - 13**
 - Liquid Limit 45 - 65**
 - OMC 20%**
 - CBR (Unsoaked) 12 - 20**
 - CBR (Soaked) 2 - 4**
-

SWELL POTENTIAL

U.S. Federal Housing Administration formula

$$P_o = -13.8 + 6.46 \text{ PI}$$

Where

P_o = Swelling Pressure (KP_a) of “dry” soil

PI = Plastic Index (%)

Using PI = 35

Swelling Pressure $P_o = 213 \text{ KP}_a$



reflective cracking could be delayed or prevented particularly on the carriageway areas.

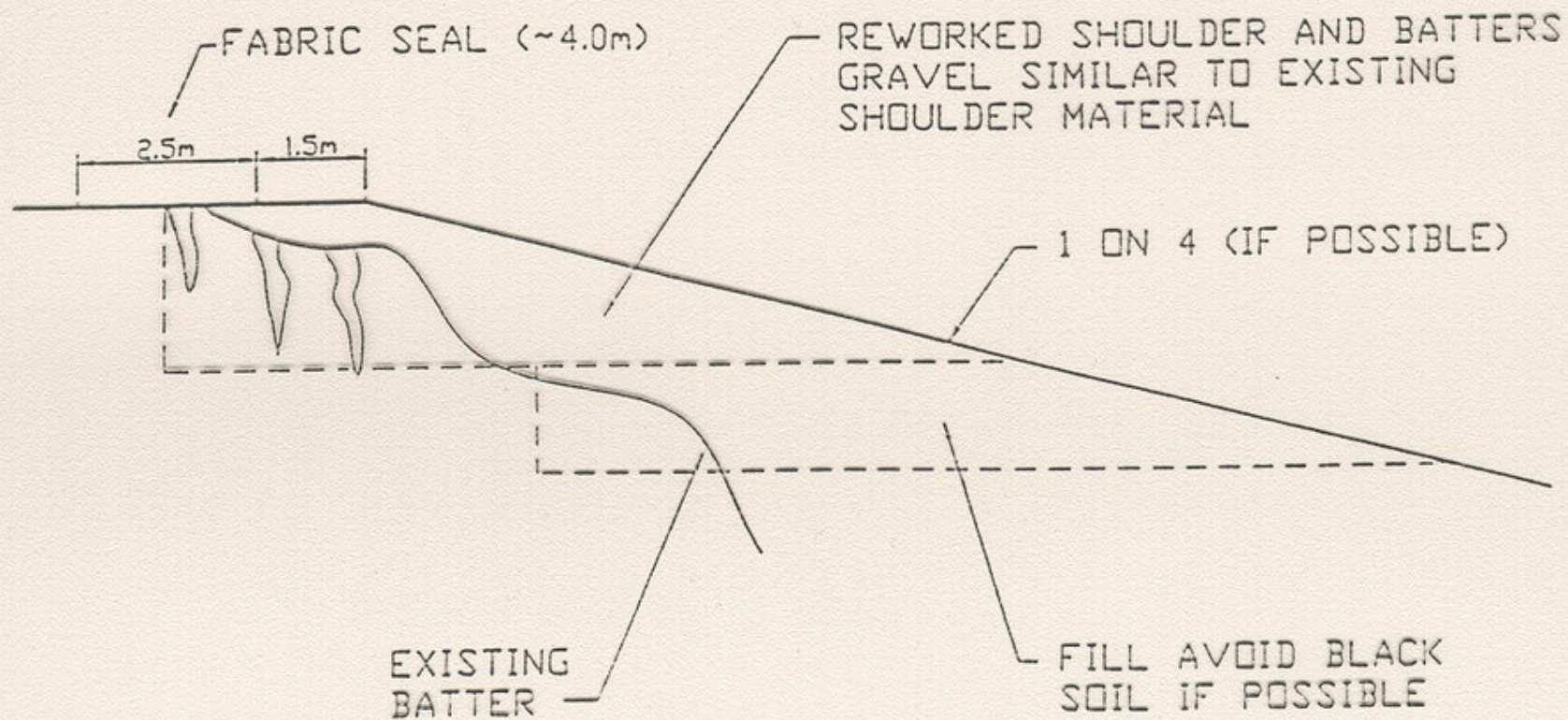


Figure 5 - Rehabilitation Treatment for Longitudinal Cracking



Location Results	Subgrade				Subgrade
	Shoulder	Edge	Center of Lane	IWP	Center of Lane
Liquid Limit (%)	122.4	118.0	111.10	104.8	36.4
Plasticity Index	77.2	81.2	64.4	59.6	20.2
Linear Shrinkage (%)	26.5	27.5	23.0	23.5	10.5

Subgrade Test Results

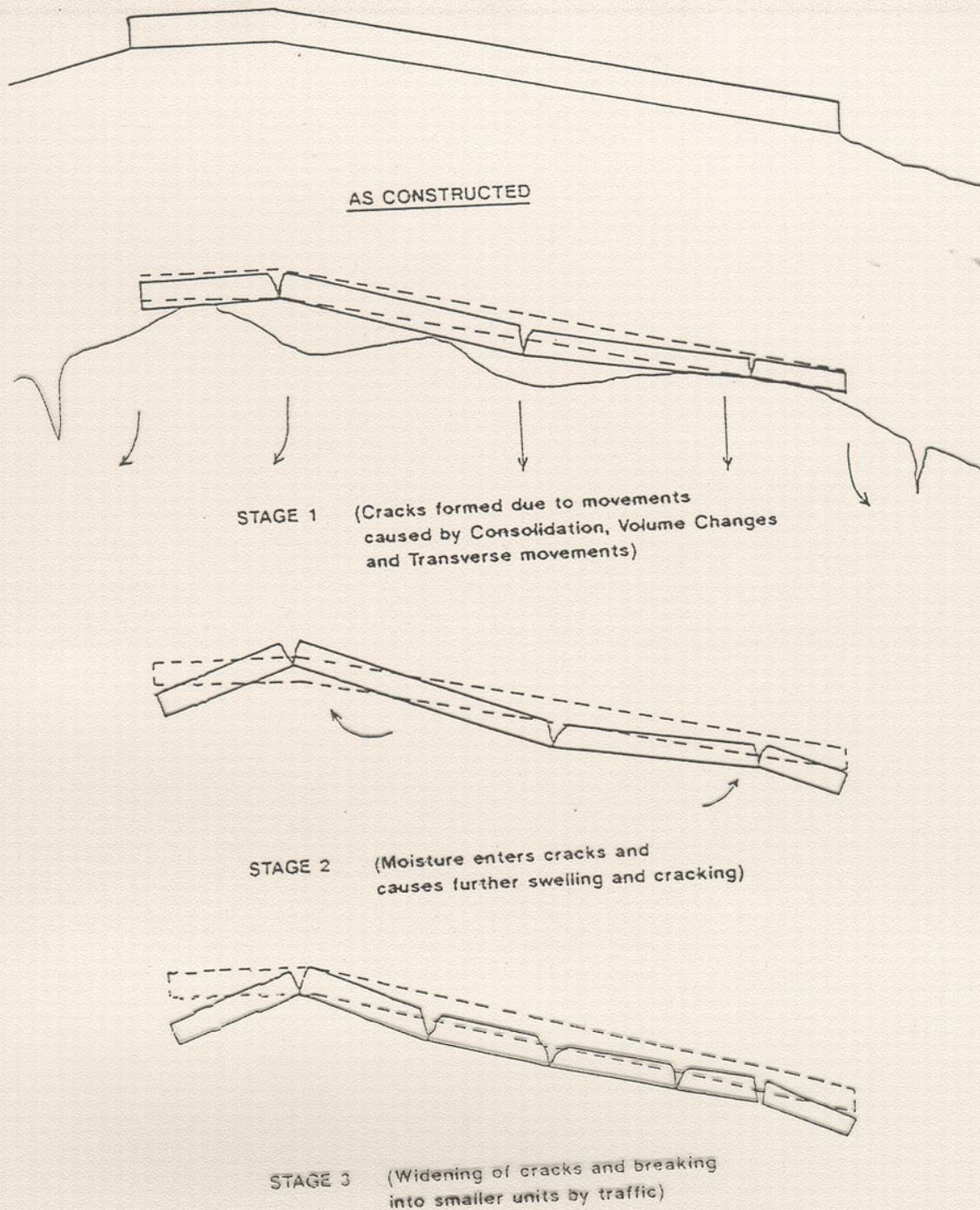
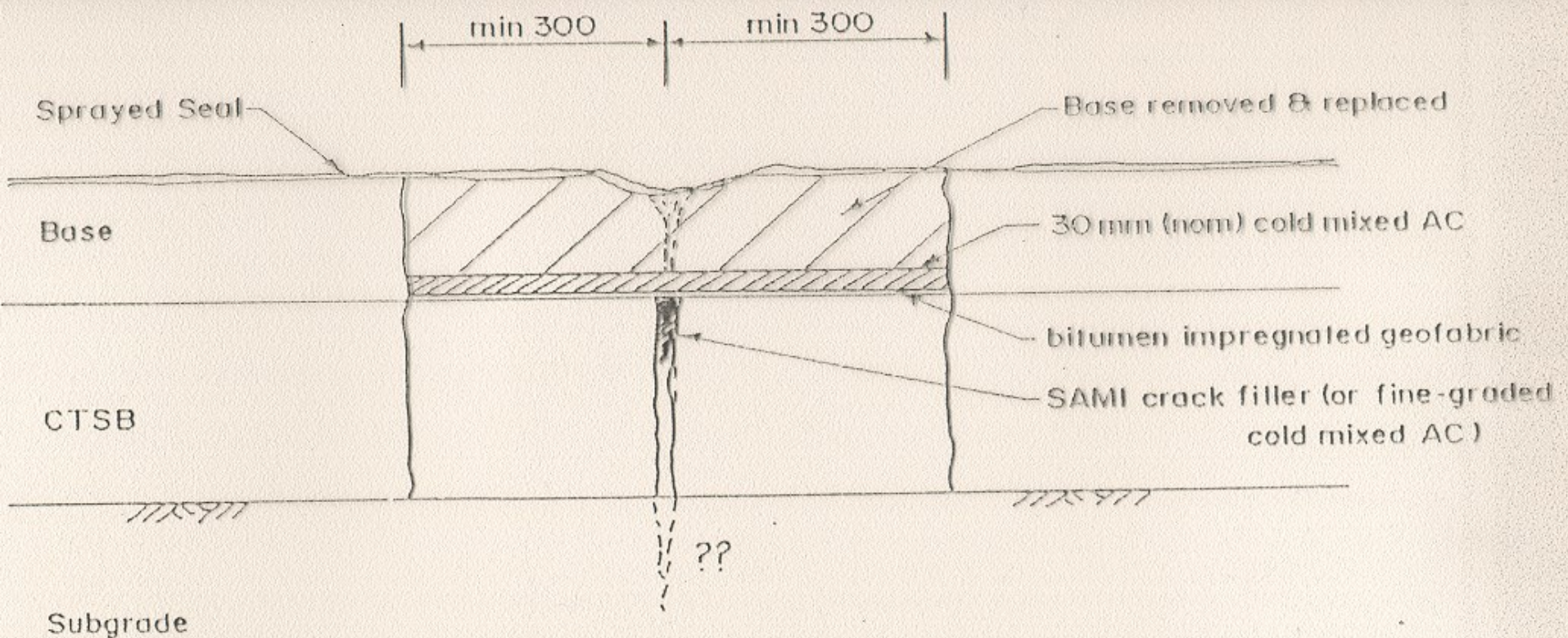


Figure 3 – Failure Mechanism



Rehabilitation treatment

Figure 4

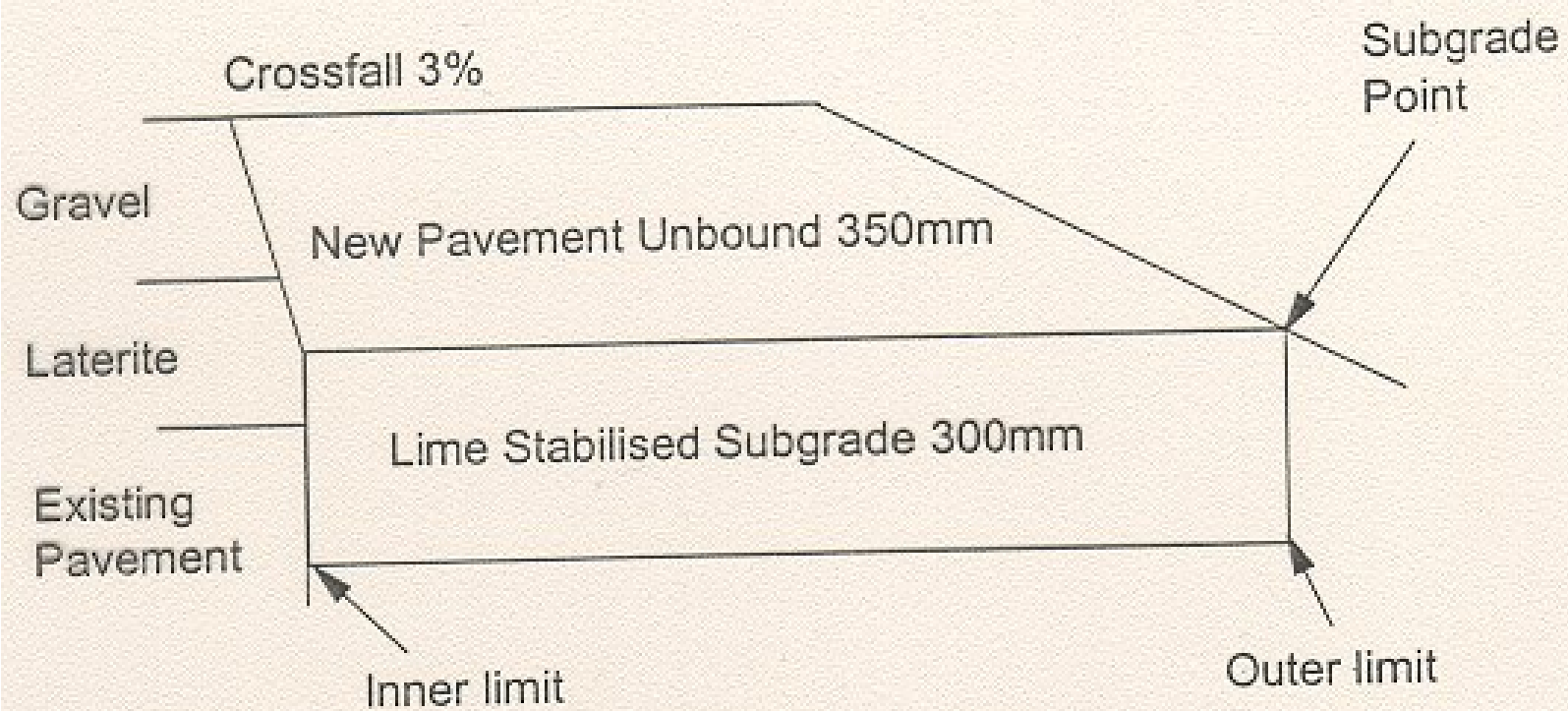


Figure 1- Lime Stabilisation of Expansive Soil Subgrade

Stabilising













