GUIDELINES FOR THE PLANNING, OPERATION AND REHABILITATION OF BORROW PITS

1. INTRODUCTION

To minimise environmental damage, the selection, operation and rehabilitation of borrow pits requires careful consideration.

Procedures and techniques which when properly implemented cause minimum damage to the vegetation and surrounding country during the operation of the borrow pit and maximise rehabilitation after the area is no longer required are outlined in these guidelines.

2. NATURAL REGENERATION OF VEGETATION

Successful and economic rehabilitation of borrow pits can normally be achieved by encouraging the natural regeneration of existing vegetation. This process is largely dependent on the proper stockpiling and re-use of topsoil which contains the essential seeds, roots and nutrients for initiating the regeneration cycle.

In most areas the topsoil layer is readily identifiable by colour and textural differences with lower layers of subsoil. In harsh stony ground or sandy areas with sparse vegetation there can be a tendency to assume that the top layer of undisturbed ground is of little value, however in these cases the top layer can be even more important for regeneration of existing vegetation than would be the case in more fertile areas.

3. PLANNING

3.1 Location of Borrow Pit

- If possible locate out of sight where it is not readily visible from such features as roads, scenic lookouts and population centres.
- If selection requires location in close vicinity to a road or area frequented by the public, retain a natural vegetation screen.
- In wide expanse borrow pits, strips of vegetation areas of not less than 5 m wide should be retained and preferably located on the contour.
- Avoid location in areas likely to create severe drainage and erosion problems, particularly if natural rehabilitation processes are likely to be protracted.

3.2 Access Tracks

Where possible, access tracks to be located to avoid -

- Direct sight lines into the borrow pit from the roadway.
- Creation of unnecessary drainage and erosion problems.

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3.3 Long Term Borrow Pit

If the borrow pit is to be used over a long term, consideration is required to be given to the provision of -

. Longer term drainage measures.

. Future extensions of the pit.

. Progressive rehabilitation of disturbed areas.

. Stockpiling of future needs to minimise further disturbance and hasten rehabilitation of depleted areas.

3.4 Alternative Use of Borrow Pit

Apart from the complete rehabilitation of borrow pits there can be situations where a community benefit could be derived by converting to -

. A dam.

. A roaded catchment area.

. An offroad parking area.

. A hardstand for the storage of construction materials.

4. OPERATION AND REHABILITATION

The diagram attached shows a typical method for the progressive operation of a borrow pit.

4.1 Clearing

. Avoid over-clearing.

. Debris from clearing of site should not be pushed into undisturbed vegetation.

. Cleared vegetation should not be burned unless there is a definite requirement to reduce bulk and handling problems. (Vegetation contains natural seed stock which is invaluable in the regeneration process.)

4.2 Stockpiling of Topsoil

. Stockpile topsoil on cleared areas and at positions convenient for respreading.

. Avoid contamination with pit overburden.

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4.3 Rehabilitation

- After excavation, reshape floor and sides of borrow pit to blend in with surrounding terrain.
- Changes in natural drainage paths must be assessed and preventative works carried out to avoid erosion at potential trouble spots.
- Uniformly respread topsoil, cleared vegetation and debris.
- Rip floor of borrow pit preferably along the contour to assist in retention of topsoil, ingress of natural moisture and to provide a seed bed for wind-blown seeds.

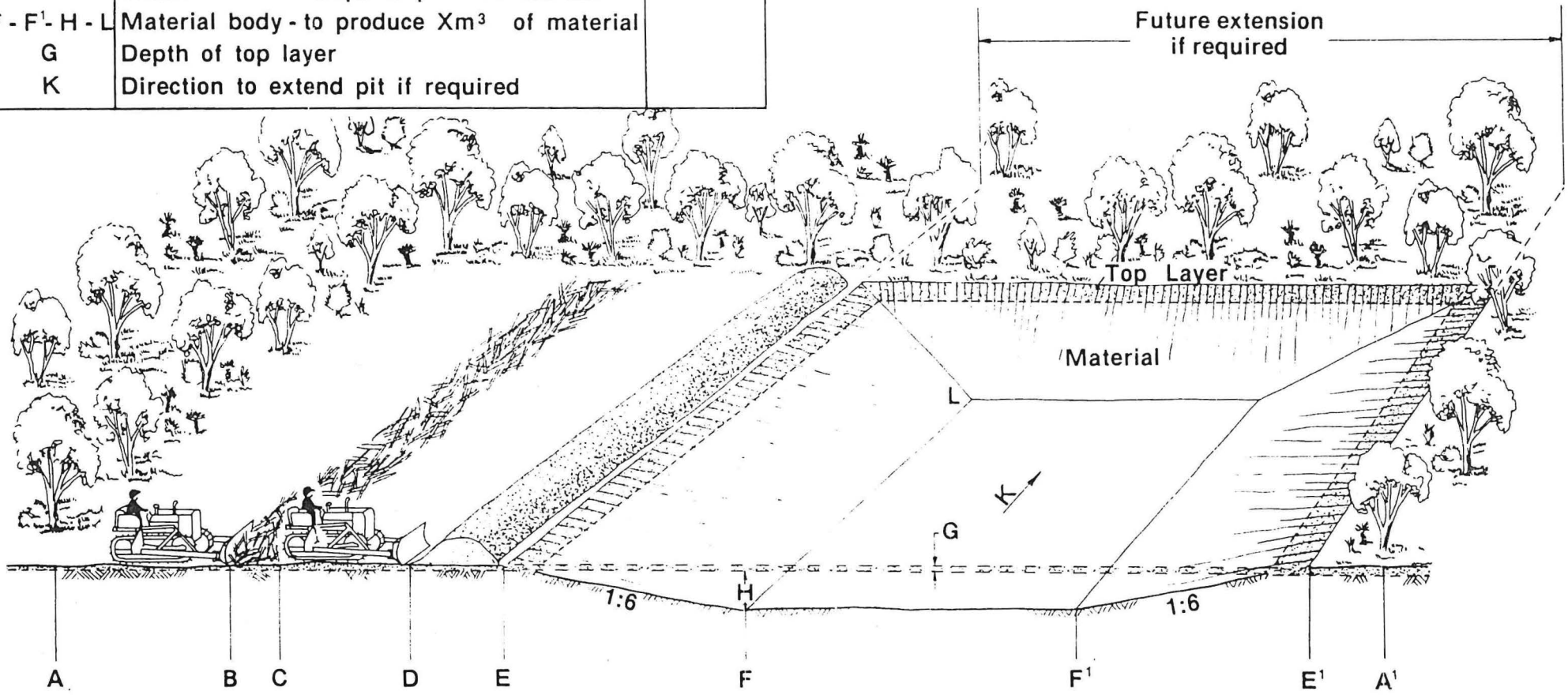
5. SPECIAL TREATMENT TO ASSIST REHABILITATION

There can be situations where natural rehabilitation techniques are considered inappropriate due to lack of topsoil, sparseness of natural vegetation or the need for accelerated stabilisation. Other treatments which may be considered include:-

- Cultivating, seeding or fertilising.
- Hydromulching.
- Bitumen emulsion spray.
- Various forms of matting or netting.
- Brush thatching.

SPECIFICATIONS FOR OPENING OF BORROW PIT		
AREA	DESCRIPTION	METRES
A - E¹	Total clearing width	To be Specified
A - B	Space to work machines	
B - C	Timber stock pile	
C - D	Space to work machines	
D - E	Top layer	
E - F	Width of batter slope to produce 1:6 fall	
F - F¹ - H - L	Material body - to produce Xm³ of material	
G	Depth of top layer	
K	Direction to extend pit if required	

NOTES:
1. Pits 20 m or less in width - clear and stock pile one side as shown A - E.
2. Pits more than 20 m wide - clear and stock pile both sides as shown A - E.



The material body should be thoroughly tested to ascertain what material is available, and the best way to make maximum use of various grades of material.