

2. PROPOSED QUARRY AT PONTVILLE

by V. M. Threader

Four diamond drill holes were put down by the Department Mines in an area $\frac{1}{2}$ mile SE of Pontville on the E bank of the Jordan as it is proposed to quarry the Triassic Sandstone in this area for building purposes. The bore logs follow this report.

A coarsely bedded sandstone which would yield 8" x 8" and 16" x 16" blocks with sufficient compressive strength for normal building purposes is required. As the size of the fragments in the diamond drill core is extremely variable a comparative scale is included in the logs to give an indication of the manner in which the stone is expected to break when quarried.

The Scale:

<i>Designation</i>	<i>Length</i>
A	>1 ft.
B	6 ins.-1 ft.
C	3 ins.-6 ins.
D	<3 ins.

These sizes are determined by the spacing and attitude of bedding and joint planes.

In D.D.H. 1 (length 30 ft 8 ins) 60% of core was in the A and B size range and 40% was in the C and D size range.

In D.D.H. 2 (length 30 ft 11 ins) 95% was in the A and B range and 5% was in the C and D range.

In D.D.H.'s 3 and 4 (lengths 9 ft 8 ins and 9 ft 7 ins) all core was in the D size range.

It has been suggested that the sandstone blocks should only be used in their original attitude presumably to guard against failure due to slip within the blocks caused by a high proportion of platy minerals lying parallel to the bedding. This provision places a heavy restriction on the utilisation of the sandstone as only one third of the sandstone drilled would have a spacing of bedding planes which would yield 8 inch and 16 inch blocks.

The proposed method of extraction employs an imported cutting machine which operates on a horizontal surface with a maximum slope tolerance of 3°. This imposes a further restriction on the percentage utilisation of material as a study of drill core and quarry exposure gives the average bedding attitude as 12°. This will cause additional wastage of rock and it would be necessary to carry out tests to determine the compressive strength of the rock at angles of 9° to the bedding. It would be advisable to determine the limiting angle for this material under normal loading. There were several clay filled fracture planes in the core but they were mostly steeply dipping and so should not cause excessive wastage.

A dolerite intrusion caps a small rise in the vicinity of the quarry. It was not intersected in any of the boreholes and is unlikely to be met in quarrying operations. However, in the vicinity of such intrusive bodies the country rock could be indurated and it is therefore advisable to limit operations so that quarrying does not come closer to the intrusion than 50 yards.

It is anticipated that approximately 50% of the material would be wasted if only 8 inch and 16 inch blocks were quarried but this loss would be offset by marketing paving and walling stone as a by-product. There is no shortage of stone in the vicinity and it is understood that additional areas can be acquired if necessary. Only two holes penetrated to the expected quarry depth of 30 feet and both of these passed into thin bedded material at the bottom. The best stone in these holes was in the middle portion of the boreholes.

BORE LOGS.

D.D.H.1

Depth		Core Recovery	Description	Length of Core Fragment
ft	in			
0	2 9	100	Soil	
2	9 3 9	100	Cream coloured coarse grained sandstone with occasional $\frac{1}{4}$ - $\frac{1}{2}$ " cavities, several longitudinal fractures. Bedding 60° to core length (dip of beds 30°)	A
3	9 6 3	90	Similar to above but core broken. A clay filled fracture from 4' 0"-4' 3" inclined at 10° to core length.	D
6	3 11 3	100	Similar to above. Bedding 65° to core length.	B
11	3 13 1	100	Similar to above with pale iron staining in fine bands.	A & B
13	1 16 9	100	Similar to above and iron stained.	B & C
16	9 20 6	100	Similar to above but much broken.	D
20	6 24 0	100	Similar to above bedding 80° to core.	A
24	0 25 0	100	Similar to above.	C & D
25	0 26 6	100	Similar to above.	A & B
26	6 30 8	100	Similar to above.	C

(From 24 ft 0 in to 30 ft 8 in all breaks occurred on clayey bedding planes, this is a thinly bedded section).

D.D.H.2

0	0 2 0	..	Soil	
2	0 4 0	90	Iron stained sandstone.	D
4	0 12 0	90	Sandstone with iron staining in fine bands.	A & B
12	0 29 2	90	Cream sandstone with occasional iron-stone bands.	A
29	2 30 11	90	Broken core. Iron stained sandstone with cavities.	D

D.D.H.3

0	0 4 0		Soil	
4	0 9 8	100	Cream to grey sandstone with a fracture at 30° to core length at 8 ft 7 in and bedding inclined at 85° to core length.	D

D.D.H.4

0	0 4 7	..	Soil	
4	7 9 7	60	Iron stained and banded sandstone. Broken core.	D