QUANTITIES OF SANDSTONE AVAILABLE FROM

COBBS HILL AND PONTVILLE

OPEN FILE

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73-935

QUANTITIES OF SANDSTONE AVAILABLE AT COBBS HILL AND PONTVILLE

Cobbs Hill

A quarry is planned on relatively flat land at the top of a sandstone cliff at Cobbs Hill with the designed dimensions of the floor 150 ft. x 100 ft.

The quarry site has been test drilled to a depth of 12 ft over a grid 60 ft. x 50 ft. and the stone found to be thick-bedded, of good colour and strength to that depth. The sandstone exposed in the cliff is also thick-bedded and appears similar in character to that drilled. In the cliff and on the flat area above it a thickness of almost horizontal sandstone of at least 72 feet is exposed. It thus seems likely that suitable stone of this thickness underlies the quarry site. The quantity available would then appear to be approximately 1.08×10^6 cubic feet. At the rate of working proposed (10,000 square face yards/annum, i.e. 3×10^4 cubic feet/annum) the quarry should have a life of 36 years.

However the potential area of good stone is considerably greater than 150 ft. x 100 ft. and the quarry could almost certainly extend from 150 ft. long to 450 ft. long. It is also likely that the quarry could be widened to 200 ft. without serious overburden problems arising. Thus the potential life of the quarry could be up to 200 years at the proposed rate of production. Eventually these estimates should be checked by drilling to 80 to 100 ft. on a grid, say 50 feet x 30 feet.

In summary it may be stated that, on available evidence, a quarry supplying 3×10^4 cubic feet/annum would have a life of 36 to 200 years.

Pontville

Sandstone is being quarried from a bench 100 feet x 70 feet in blocks eight inches deep. The good stone occurs in a bed which dips at about $12°$ to the south west, is bounded on the north-eastern side by a fault beyond which the sandstone is softer and passes south-westwards beneath a bed of sandstone with more joints and fractures than the stone being worked.

The bed may be expected to continue in a south-easterly direction - but just over 100 feet along strike in this direction may cut out against a dolerite sheet which appears to be rising at a shallow dip from the north-east. The outcrop of the bed of good stone is likely to be restricted further south-east by this sheet to a width of 50 ft. at which width it probably continues for a further 250 feet. Thus if the trend of the fault and strike of the bed continue as in the quarry the quantities of stone available are as follows, assuming working depth of 16 feet:

in present quarry (average about 8 feet deep)

(a)   100ft. x 70ft. x 8ft. = 5.6×10^4 cubic feet

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in a proposed quarry immediately adjacent to and south-east
of the present quarry

(b)   100ft. x 70ft. x 16ft. = 11.2 x 10^4 cubic feet.

in a possible extension to the south-east to the limit of outcrop

(c)   250ft. x 50ft. x 16ft. = 2 x 10^5 cubic feet.

at the rate of extraction proposed (100ft. x 70ft. x 0.67ft./1½ months =
approximately 3.73 x 10^4 cubic feet/year), useful life of the sites are:

(a)   approximately 1.5 years

(b)   "   3   years

(c)   "   5.5 years
                    ————
                    10   years
                    ————

To validate this estimate test drilling should be done. The
precise position of the dolerite/sandstone contact on the ground surface
is unknown as is the underground shape of this contact. The effects of
the dolerite on the sandstone are not known with certainty. The baking
effect of the dolerite may actually improve the sandstone but may make
extraction more difficult. Extension of the quarry in a north-westerly
direction should also be considered very seriously as there is no
dolerite in that direction within the property boundaries and the bed
of sandstone being worked should extend in that direction for several
hundred feet. Every 33.6 feet along strike (assuming 70 feet of width
and 16 feet of depth) represents one year's production. On this basis,
extension of the quarry to the north-west is likely to give a life well
in excess of 10 years.

In summary, extension of the quarry at Pontville in a south-
easterly direction should provide enough suitable stone for production
for from 4.5 to 10 years, extension in a north-westerly direction for
much longer than this. Validation of these estimates by drilling
before development to the south-east would be advantageous.

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