

(1) Number of pages 6(2) Date of repair 7-9-42

(3) Initials of the Referencer \_\_\_\_\_

## MADRAS RECORD OFFICE.

Government of Madras.

*Public Works* DEPARTMENT.

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| G.O. No. 3824     | Press<br>Mis. |
| G17-618           |               |
| Dated 24-12-18 62 |               |

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,  
24th December 1863.*

No. 617. Read the following Circular from Captain E. C. S. WILLIAMS, R. E., for Secretary to the Government of India, Public Works Department, to the Secretary to the Government of Madras, Public Works Department, dated Camp Meean Meer, 18th November 1863, No. 61 G G—

SIR,

I am directed to forward for information the enclosed Memorandum containing a description of a cheap kind of mile-stone used on roads in the Seetapoor District, in Oudh.

*Description of a cheap Mile-stone used on Roads in the Seetapoor District.*

These so called mile-stones are made of clay, mixed, moulded, dried, and burned in a peculiar manner. Fine potter's clay, such as is used for native earthenware, is mixed with about  $\frac{1}{4}$ th to  $\frac{1}{2}$ th its weight of dried horse dung, and the same quantity of sand, until the whole is well incorporated into a stiff mass. This clay is forced into moulds by treading with the naked feet, the mould being first dipped into water, and then dusted with fine sand, in order to prevent the clay adhering to the sides. The mould having been inverted upon a plank, or level piece of ground, it is withdrawn gently, so as not to injure the shape of the stone. Trifling imperfections are then repaired, the surface is thoroughly polished or smoothed in the ordinary native method, and the stone is left to dry very gradually.

This is effected by burying the brick a few inches deep in ashes or dry sand. In a fortnight the covering is removed, and the stone is thoroughly dried in the sun for about a week longer. At the end of that time it may be turned and left exposed for a fortnight longer, success depends almost entirely on gradual and complete drying.

A set of figures and letters are cut out of tin-plate or sheet iron, and the proper figure having been placed on the face of the stone, it is marked out by drawing a sharp tool along the edges of the plate. The letters and figures thus marked are cut into the surface to the depth of  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch.

It is convenient to have a few spare stones without figures, in order to supply deficiency in any particular number; the figures can be cut in after burning, but this is more difficult.

The stones may be burned in any kiln which ensures slow, equal, and complete burning throughout, and gradual cooling.

The time required is about five days for burning, and perhaps the same for cooling.

The stones, when finished, are of a good red colour, and the figures are printed black.

The cost of these stones average about 12 Annas each complete, but it is probable that with practice less would suffice.

Cheapness and durability are their great recommendations, for masonry pillars are too dear, and wooden posts too perishable.

The stones are merely stuck into the ground, without support or protection of any kind, and have no pretensions to be more than a cheap and simple contrivance.

They have stood the weather well, but they have suffered from the cattle which graze in the neighbourhood of the roads, and use them as posts on which to sharpen their horns; they are thus often thrown down or broken off. They should therefore be placed in future on an eminence, and be protected by a small trench.

If greater strength is required, the addition of an iron rod of  $\frac{3}{8}$  inch thick, as shown in the plan, would suffice. This could be placed in the mould with the clay, and burnt in.

It is not supposed that these stones cannot be improved upon, both in material and in form. There is ample room for alterations.

The same material has been employed for making imitation stone-posts to support chains for garden fences, for pavements in black and red, and many other purposes in which imitation stone is useful. The pavements, after being laid down in dry sand, are polished with sand and water, and, if necessary, oiled and varnished with simple shell-lac dissolved in spirits of wine; this gives a smooth, polished, and durable surface.

E. THOMPSON,  
*Deputy Commissioner.*

No. 618. ORDER THEREON, 24th December 1863, No. 3,824.  
Communicated to the Superintending Engineers.  
(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,  
*Secretary to Government.*

To the Superintending Engineers.

Exd. T. T. Augustin.

*Description of a cheap Mule-stone used on Roads in the Seetapoor District.*

These so called mile-stones are made of clay, mixed, moulded, dried, and burned in a peculiar manner. Fine potter's clay, such as is used for native earthenware, is mixed with about  $\frac{1}{4}$ th to  $\frac{1}{4}$ th its weight of dried horse dung, and the same quantity of sand, until the whole is well incorporated into a stiff mass. This clay is forced into moulds by treading with the naked feet, the mould being first dipped into water, and then dusted with fine sand, in order to prevent the clay adhering to the sides. The mould having been inverted upon a plank, or level piece of ground, it is withdrawn gently, so as not to injure the shape of the stone. Trifling imperfections are then repaired, the surface is thoroughly polished or smoothed in the ordinary native method, and the stone is left to dry very gradually.

This is effected by burying the brick a few inches deep in ashes or dry sand. In a fortnight the covering is removed, and the stone is thoroughly dried in the sun for about a week longer. At the end of that time it may be turned and left exposed for a fortnight longer; success depends almost entirely on gradual and complete drying.

A set of figures and letters are cut out of tin-plate or sheet iron, and the proper figure having been placed on the face of the stone, it is marked out by drawing a sharp tool along the edges of the plate. The letters and figures thus marked are cut into the surface to the depth of  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch.

It is convenient to have a few spare stones without figures, in order to supply deficiency in any particular number, the figures can be cut in after burning, but this is more difficult.

The stones may be burned in any kiln which ensures slow, equal, and complete burning throughout, and gradual cooling

The time required is about five days for burning, and perhaps the same for cooling.

The stones, when finished, are of a good red colour, and the figures are printed black.

The cost of these stones average about 12 annas each complete, but it is probable that with practice less would suffice

Cheapness and durability are their great recommendations, for masonry pillars are too dear, and wooden posts too perishable.

The stones are merely stuck into the ground, without support or protection of any kind, and have no pretensions to be more than a cheap and simple contrivance.

They have stood the weather well, but they have suffered from the cattle which graze in the neighbourhood of the roads, and use them as posts on which to sharpen their horns; they are thus often thrown down or broken off. They should therefore be placed in future on an eminence, and be protected by a small trench.

If greater strength is required, the addition of an iron rod of  $\frac{3}{8}$  inch thick, as shown in the plan, would suffice. This could be placed in the mould with the clay, and burnt in.

It is not supposed that these stones cannot be improved upon, both in material and in form. There is ample room for alterations.

The same material has been employed for making imitation stone-posts to support chains for garden fences, for pavements in black and red, and many other purposes in which imitation stone is useful. The pavements, after being laid down in dry sand, are polished with sand and water, and, if necessary, oiled and varnished with simple shell-lac dissolved in spirits of wine; this gives a smooth, polished, and durable surface.

E. THOMPSON,  
*Deputy Commissioner.*

*59/6735*

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CIRCULAR No. 61 G. G. of 1863.

FROM

COLONEL R. STRACHEY, R. E.

SECY. TO THE GOVT. OF INDIA, P. W. DEPT.

To

WITH THE CAMP.

*The Secretary to the Govt. of Madras*

PUBLIC WORKS DEPARTMENT.

*Camp Meer Meer, 18th November, 1863.*

Communications.

SIR,

I am directed to forward for information the enclosed Memorandum containing a description of a cheap kind of mile-stone used on roads in the Seetapoor District, in Oudh.

I have the honour to be,

SIR,

Your most obedient Servant,

*Captain, R. E.*

*for Secy. to the Govt. of India, with the Camp.*

*5/11/63*

Box 1863 Richardson  
City of Fort St. Vrain  
Circular 5324

James  
J. Goodson to Mr. Goodson  
Dated 18th of June 1863  
Recd 21st Dec 1863  
G 1 No 61

How and in a memorandum  
containing a description of a check  
kind of millstone used on the  
roads in the State of South  
in Oule  
No 3824-24 December  
with an order

of the City Engineer  
J. H. Goodson  
Circular 5324  
Communicated to the City Engineer  
No 3824  
No 3824-24 December  
Circular 5324