Public Works (1897) Department.

G.O., No. 515 W

DATED 22. February 97

[Despatch Abstract.]

Famine. Proc: Revenue Dept. Courts: a resolution recorded by the Govt. of the N.W.P. & Oudh regarding operations undertaken in the Province, to be with a set of rules framed for the guidance of Offices employed on relief works, Court to Supdt. Enclosures.

T.C. 22/2/97

24/2/97

[P.W. 25. 5,000—30-11-96.]

Indexed.

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Public works (1897) Department.

Current Numbers: 1621

Government {1897} of Madras.

REVENUE.

Recd. 15. 1. } 1897.
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Enclosures

Spare copies 9

G.O., No. 14, 9th January 1897.

B/ 515 dated 22.1.97

Communicated to Suptg Engineers for information in continuation of G.O. 3511 W dated 9. December 1896.

19/2/97

JANUARY.

S. Engrs dd 23/2/97

K.S.

Famine.

Communicating to the Board of Revenue and to all Collectors for information copy of a Resolution recorded by the Government of the North-Western Provinces and Oudh regarding — operations undertaken in the United Provinces, together with a set of the rules framed by that Government for the guidance of officers employed on relief works.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following letter from F. G. SLY, Esq., C.S., Under Secretary to the Government of India, Department of Revenue and Agriculture (Famine), to the Secretary to the Government of Madras, dated Calcutta, the 19th December 1896, Cir. No. 21/5-54.

In continuation of Mr. Ibbetson's Circular No. 16/5-38, dated 9th November 1896, I am directed to forward, for the information of the Governor in Council, a copy of a Resolution No. 18-P.W., dated the 5th December 1896, recorded by the Government of the North-Western Provinces and Oudh, regarding famine operations undertaken in the United Provinces, together with a set of the rules framed by the local Government for the guidance of officers employed on relief works.

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Enclosures.

Read—the following Resolution by His Honour the Lieutenant-Governor, North-Western Provinces, and Chief Commissioner of Oudh, Public Works Department, Buildings and Roads Branch, dated Allahabad, the 5th December 1896, No. 18-P.W.:—

Read—

Report by C. G. PALMER, Esq., Superintending Engineer, 3rd Circle, on Famine Relief Operations in the Bundelkhand districts, dated 23rd September 1896.

Note by the Hon'ble Mr. C. W. ODLING, Chief Engineer, Buildings and Roads Branch, dated 6th October 1896.

Resolution No. $\frac{3945\ S}{1-54}$, Revenue (Scarcity) Department, dated 20th October 1896.

Observations.—During the late famine in Bundelkhand extensive relief works were for some months in operation; and during their progress much experience was gained regarding the organization of relief labour; the control of relief works; the fixation of wages; the provision of food; and, generally, the sanitary management called for by the concentration of large bodies of people on public works. As a fresh failure in the crops has again made relief works necessary, the Lieutenant-Governor and Chief Commissioner thinks that the lessons learnt in Bundelkhand cannot fail to be useful to those who will now have to administer relief on public works: and accordingly His Honour has caused the rules which accompany this Resolution to be drawn up on the basis of the system which was eventually found in Bundelkhand to be most effectual for the purposes mentioned above.

2. These rules deal with subjects of various degrees of importance; but, perhaps, the points which require the greatest attention are those connected with the classification of workers (paragraph 35), classification of children (paragraph 36), scale of wages (paragraph 59), manner of payment (paragraph 60), and variations in wages (paragraph 61) of the Resolution. While a reasonable discretion is allowed to executive officers on the spot in adapting the rules on other matters to particular or local requirements, no departure should be made without the sanction of Government from the orders contained in the paragraphs of the rules now mentioned.

The other rules are, in the main, directions as to the detailed management of relief works. The principles underlying them or expressly stated in connection with them must be observed: but discretion as to the application of the principles and rules is, with the exceptions stated above, allowed to the District Engineer/Surveyor, Divisional Engineer, Collector, and other responsible officers. Any material departure, however, from the instructions now given should be reported for the orders of Government.

C. W. ODLING,
Secretary to Government.

Order.—I.—Ordered that a copy of this Resolution, and of the Rules referred to therein, be forwarded to all Commissioners of Divisions, Collectors of Districts, Superintending and Divisional Engineers, and District Engineers/Surveyors, for information and guidance; also to the Scarcity Department of this Government and to the Examiner, Public Works Accounts, for information.

II.—Ordered also that a copy of the Resolution, together with a copy of the Rules, be forwarded to the Government of India, Revenue and Agricultural Department (Scarcity), for information.

C. W. ODLING,
Secretary.

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No. W.A.

Dated Allahabad, the *December* 1896.

Copy, with ——— spare copies, forwarded to the

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Enclosures. *Registrar,*
——— spare copies. for *Secretary.*

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GOVERNMENT, NORTH-WESTERN PROVINCES AND OUDH,

Public Works Department.

Famine Relief Works.

The following rules and orders are issued for the guidance of officers employed on relief works conducted under the provisions of the Famine Code, and carried out by the Department of Public Works:—

By Order of the Lieutenant-Governor and Chief Commissioner.

C. W. ODLING,
Secretary to Government.

Allahabad,
The 1st December 1896.

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These instructions are for guidance in conducting in the field relief works under the Famine Code, in tracts officially recognised as distressed. They are not applicable to works conducted by the Department of Public Works as ordinary works, under article 60, Famine Code, or as test works, undertaken in districts or tracts under observation but not officially recognised as distressed.

2. The backbone of all large relief works must be earthworks, and in their selection certain points call for special attention. An ever present difficulty is to find work enough for the undue proportion of carriers that crowd on to a relief work in the shape of weakly men, women, and children; so that the longer the 'lead' of earthwork is, the less ineffective are the results, and the more economically is the work done. It is often most difficult for the organization to control the labour, especially when one of the unexpected rushes occur of which we have had such frequent examples; so that the more the work is concentrated, the better it can be looked after.

3. It is thus of the highest practical importance to select simple earthworks which do not require very much laying out, which afford work in large quantities, and which have a good length of 'lead.' The selection of relief works is not, except in the case of village works, always determined by considerations connected with the effectiveness of the labour: but when these considerations predominate, then it should be remembered that deepening of a tank is about the most effective relief work which can be carried out. Next to that is the excavation of a canal or any wide ditch where there is a great deal of work per footrun and the earth has to be carried well away. Close behind it is a heavy railway embankment formed from deep borrow pits well away from the embankment. Last of all earthworks is the ordinary raising of an unmetalled road; and in this case it is far more effective to raise the road by a foot than to raise it only half that amount. A masonry work is of little practical use for famine relief. Stone-breaking is at times very useful.

4. But in every case, for a work to be truly economical it must be reproductive when done, either directly reproductive or indirectly so by being of practical use to the public. It may often occur that a work which can be very effectively constructed will be of so little use that it will be more economical to take up some other less effectively constructed work. For instance, in a very wet district it will be more economical to embank a moderately useful road than to deepen a tank that is of no use. There is thus room for the exercise of considerable thought and judgment in the selection of famine relief works, and it will be amply repaid by the results.

5. The recent relief operations in the Bundelkhand districts of these provinces taught many useful lessons, the more general of which are set forth in G.O., No 249 of 26th November 1896. This order is reprinted as appendix I to these orders and should be carefully studied.

6. The work which has to be done in the field may be conveniently considered under the several following headings, which are placed more or less in the order in which they will call for attention :—

I.—Establishment.
II.—Tools and baskets.
III.—Funds and supply of coin.
IV.—Drinking water.
V.—Food.
VI.—Field hospitals.
VII.—Hutting.
VIII.—Conservancy.
IX.—Organizing relief labour. The Gang.
X.—The Task. Setting out work, and getting it done.
XI.—Wages.
XII.—Reports and Accounts in the field.
XIII.—Checking Works, Numbers, and Payments.

I.—Establishment.

7. Clause IV, paragraph 28, of the above-quoted Resolution describes the higher officials required on a relief work. Any number of workers, up to 5,000, or at the outside 6,000, will form a 'charge' and will require an 'officer-in-charge,' whose duties are described in article 77 of the Famine Code. If the numbers on a work exceed 6,000, an additional work should be commenced without delay; another part of the same road may suffice, but it *must be* a separate "charge." If the 'charge' contains less than about 3,000 workers, it will be sufficient to give him one sub-overseer, or work-agent, to help; but if there are more than that number, he must have two such men. The 'officer-in-charge' will most conveniently, and ordinarily, be a naib tahsildar placed at the disposal of the Public Works Department and posted by the Superintending Engineer on the indents of the Divisional Engineer. He will be the cashier and general supervisor on the spot, and one of his duties is to see that work is really done, or else proper fines actually recovered for short work.

8. It is the duty of the sub-overseers or work-agents to lay out work in advance, to have profiles ready where necessary, to measure up the work done by each gang of workers, and to assess the requisite fines for short work in the manner explained further on. Where there are two or more such men, one of them has to look to the setting out of work ahead, and the other to the proper finishing up of it behind the gangs. One of them is put in charge of all tools on the work. The men will be posted by the Superintending Engineer on indents from the Divisional Engineer, whose duty it is to regulate his indents in accordance with the probable number of workers, and to apply a fortnight in advance of requirements wherever that is possible, so as to have the officials on the spot in time to prevent the organization being overpowered by a rush of relief workers. When no more Public Works sub-overseers are available, suitable men of the class of overseer, or sub-overseer, are temporarily engaged by the Superintending Engineer on a salary of Rs. 50 to Rs. 65 per month on the terms stated in the form of appointment put in as Appendix VII, and are called work-agents. The Divisional Engineer should keep a list of any suitable local men he can hear of, and appoint them as occasion arises; reporting each such appointment to the Superintending Engineer, with the information required for the purpose of filling in the appointment form in the Superintending Engineer's office.

9. As long as there are only three or four separate charges going on in a district, the District $\frac{\text{Engineer}}{\text{Surveyor}}$ can look after them himself; but when there are more than that number, he will require the assistance of an Inspecting Officer of the standing of a Public Works Upper Subordinate, whose services will be obtained by an indent from the Divisional Engineer on

the Superintending Engineer. The Inspecting Officer will act under the orders of the Sub-Divisional Officer, and it will be his duty to go round his parties in succession, spending three days with each when possible, to correct all faults in organization, to check the numbers and payments, check the quantity of work and look into its quality, and also assist in aligning new work, or anything else the Sub-Divisional Officer may require help in. When it is impracticable to depute a Public Works subordinate for these duties, a temporary Inspecting Officer will be appointed by the Superintending Engineer, ordinarily on a consolidated salary (including travelling allowance) of Rs. 150.

10. These principal officials require the Superintending Engineer's or higher authority for their appointment. The minor ones who will now be mentioned belong to class IV, paragraph 619 of the Public Works Department Manual of Orders, and as such may be appointed by the District $\frac{\text{Engineer}}{\text{Surveyor}}$ under paragraph 621; he should therefore make his own arrangements for them. He should keep a list of candidates and may have two or three men more on his works than is absolutely necessary, with the twofold object of getting them into training and having them at hand when wanted. Every 'charge' requires the following minor establishment :—

One vernacular clerk of the *tahsíldár* class, that is, a man qualified to act as sub-cashier under the officer in charge. He will ordinarily be appointed by the officer in charge, who is responsible for him. Salary, Rs. 15 to Rs. 20.

One clerk who can keep accounts in English. May best be appointed by the officer-in-charge, whose assistant he will be. Salary, Rs. 15 to Rs. 20.

One disbursing vernacular clerk (called gang *muharrir*) for about every 1,000 relief workers. These should be reputable men known to the tahsíldár or other responsible official. When wages are paid bi-weekly a *muharrir* can register and pay 1,400 persons. Salary, Rs. 10 to Rs. 15.

One tools *muharrir*. Salary, Rs. 8 to Rs. 12.

The duties of the first two are obvious, and they work as assistants to the officer-in-charge. The gang *muharrirs* calculate the wages and do the greater part of the actual counting out and disbursing of wages, each for his own gangs. The tools *muharrir*, or storekeeper, has immediate charge of the tools under one of the sub-overseers, who is responsible for him and should make the appointment.

In addition to these there has to be a Foreman of the water arrangements. Salary, Rs. 12 to Rs. 18 per month. Two or more 'mates' on daily wages under him. An experienced 'mate' or '*tindal*' for nicking out the work set out by the sub-overseer or work-agent. His gang of 10 to 20 men should all be intelligent professional labourers, accustomed to that sort of work and paid as Class B. There must also be a *jámadár* of sweepers in charge of the sweeper gang.

II.—Tools and Baskets.

11. For every 1,000 attendants on a relief work, including both workers and their dependants, a supply of 120 digging tools and a first outfit of 600 baskets will be required. The digging tools will ordinarily consist of 10 to 20 per cent. of pickaxes or *kodals*, and the rest *phaorahs*. The proportions of these tools will vary greatly with the nature of the soil to be dug, and sometimes heavy *phaorahs* will be required, and in other places the lighter kinds. It is impossible to give any general directions on this point, and the Divisional Engineer must see to the right kind of tools being provided for the work that has to be done. Ample provision requires to be made for keeping up the supply of baskets. The village supplies soon run out, and this year there will be difficulty in getting the material to make baskets from. An order for a million baskets has been given to the jails of these provinces, and a two months' supply should be secured at once, according to the numbers expected on the works by the end of December.

12. It sometimes happens that the people rush on a relief work in the most unexpected manner, and 9,000 or more people may be present on a work four days after it is opened and before there is time to start another one, or get out tools. This actually occurred in the present year. To provide against such accidents, every new work should have a supply of tools for 10,000 persons when it opens. If a rush occurs, it can be met and there will be time to draft off the surplus numbers with a supply of tools, &c., on to a new work opened for the purpose with the Collector's sanction and assistance. If there is no such rush during the first ten days or so, tools for 6,500 persons should be kept on the work and the balance sent to any new work about to open, or any other work which may be in want of them at the time. In every case a newly opened work must open with tools enough to give employment to 10,000 persons (including dependants) in case there is a rush. This is never to be omitted.

13. In all road and embankment work large numbers of wooden *thappis* for breaking up clods will be required: a supply of 4,000 *thappis* should be ready to start with. These will require to be of the pattern in local use, but rather light, and should be made up in advance

on the spot or wherever most convenient to start with. A small gang of carpenters should be employed on every work to keep up the supply of these and of tool handles. Famine coolies seem to break more handles than the ordinary digger at first: a supply of 3,000 should be at hand.

III.—Funds and Supply of Coin.

14. The credit order is obtained in the usual way, and the problem is to keep the different relief works in funds on the spot without a very large floating balance in process of transit, and much time and labour wasted in the process. An imprest of over Rs. 1,000 is forbidden; it is therefore of no use to give the officer-in-charge an imprest on any large work. He must keep a cash book, but he may not have a separate credit in the treasury. The following method of keeping the relief works in funds has proved very successful and economical.

15. The District Engineer in consultation and with the help of the Collector should select two or more sub-treasuries as paying centres, and arrange that the tahsildar in charge shall cash cheques sent him in his name, but for certain pre-arranged officers-in-charge of relief works. He should himself start each work and keep the officer-in-charge in funds while there. A few days of open work will show how things are going. When leaving the work, the probable expenditure for the next week should be computed and the officer-in-charge given enough money to keep him going for that time. After that a watch on his daily reports should be kept, and before he is out of funds, his expenditure for the next week should be calculated and a cheque for the amount sent to the tahsildar, in the name of the tahsildar, but endorsed 'for' the officer-in-charge to whom the money is to go. The tahsildar cashes the cheque and sends the money under guard to the officer-in-charge, who enters it in his cash book in the usual way.

16. Each 'charge' will require one iron safe; the Roorkee pattern of safe does very well, it is about $2\frac{1}{2}' \times 1\frac{1}{2}' \times 1\frac{1}{2}'$ high. There must also be two wooden chests, iron bound and tin lined, with two hasps and padlocks. Size of chest, $2\frac{1}{2}' \times 2' \times 2'$ high. One of them remains on the work and holds the pice, the other is used in transporting money from the treasury. If the chest is not tin lined, the pice fall through the cracks which occur in green wood.

17. At least three weeks' supply of copper coin should be available in local treasuries to begin with. At first it will mostly soak into circulation and disappear, but after a short time it will begin to flow back in exchange for silver; and after the works have been going for six or eight weeks, the rupee will be at a premium, and Baniahs will give something more than 16 annas in copper for the silver rupee.

IV.—Drinking Water.

18. To keep this pure it is necessary to guard the wells from contamination for some days before a work is started. Select some respectable, cleanly man of good caste who can be trusted to attend to the business, and make him foreman of the water arrangements. He must have four or five Brahman mates, a Kahár mate, about twenty Kahár carriers, and the same number of Brahman drawers and distributors under him. He will require about ten iron buckets (*dóls*) of the country shape (with a round bottom) for drawing water, and about sixty kerosine tins for carrying water. This will probably be enough to commence with, but the proportions will of course differ with the distance of the wells from the work; and in any case the staff and plant will probably have to be increased at one time or another.

19. The kerosine tins require to be strengthened with an iron strap under them and a handle for carrying about. Half of the top should be cut away and hinged on again to prevent water splashing out. The water foremen should take possession of all wells close to the future work a week or so ahead of the workers, and at once put each in charge of a Brahman with one or more assistants, and arrange so that these men shall draw water for any one who requires it: but they must *allow no one else to do so*, or even to come on the well platform. From that time till the workers leave the locality each such well should remain in charge of the same set of men, and they should never allow any other person to dip a *lota* into it, or to stand on the platform. The rigid preservation of the purity of their water-supply is one of the very few sanitary measures which the people will heartily approve of, and in which they will assist so far as they can do it without taking trouble.

20. The actual distribution is most readily effected by utilizing the old established method of setting up *piaos*, or drinking places, at short distances apart. A large earthen jar, called a *gal*, is purchased for three to four annas and set up, a little aslant, on a low mud platform. By the side of it a narrow trough some five feet long is set up on two stakes, with a slight slope through it and the further end about two feet above the ground. It is important to take care that this trough shall always be of iron, never of wood.

21. The jar is filled from the kerosine tins (earthen *ghards* must never be used for carrying water in) by the water Kahárs, and by them alone; no one else may touch it. By the side of it sits the distributing Brahman, and when any one comes for water, he fills his brass pot, or

lota, and pours water into the man's jar, or pot, by means of the trough. He must never pour directly into any man's pot or jar, but always into the trough and thence into the jar, placed below the trough and filled from it. It is important to have the trough well above the ground, so that it may not be touched by the jars or splashed from them. It is important to have the trough of iron, because if it does happen to get infected, it will, what with rust and heating in the sun when dry, almost certainly disinfect itself very soon after. The great jars, *gols*, should never be carried on to a fresh place, but should be broken up, and new ones used at each new *piao*. One such *piao* should be set up at every second furlong stone along a relief work.

22. If there are more wells than need be used, the unused ones should be guarded to keep off the workers, and so also with doubtful or tainted wells. If wells are miles apart and a doubtful one has to be used, it should be disinfected with permanganate of potassium according to Professor Hankin's instructions reprinted as Appendix II. So also if cholera should break out. If water has to be carried a long distance, it will be found best to carry it in casks fitted with brass cocks and loaded two in a cart. Wells should always be drawn on in preference to tanks, if within a practicable distance. All this organization about the water-supply may seem to involve a great deal of trouble over a small matter, but a neglect of it will have sure consequences where large bodies of people are collected together, and especially when they are famine-stricken people. These precautions are of vital importance to the public health.

V.—Food.

23. So far as present experience has shown there is no reason to expect any deficiency in the actual supply of food; but it is desirable that the quality should be looked into very frequently, and immediate action taken against any one found selling unsound food. The food trade on a full sized famine relief charge is greater than that in any ordinary small Indian town, and if special facilities are given to respectable local traders, they will be careful not to lose them by selling unsound food, or worrying the people with needlessly frequent changes in their prices. Following the principles of article 95, Famine Code, the under-mentioned advantages can be offered, among others, in exchange for fair trading:—a small grass hut for a shop situated near *piao*, and within the range of the treasure or other guards; free carriage of grain from the nearest mart, if the trader is willing to sell at the current rates of that mart; prompt and free exchange of all his copper into silver paid into the local treasury to his credit. It is usually quite easy to find several respectable men who can understand the value of such advantages to their trade, and are willing to give honest goods and reasonably steady prices in exchange for them, so long as they are pretty closely looked after.

But it may occasionally occur that a relief work is situated in such a remote locality that private traders are unwilling to go there without other inducements than those noted above. In that case, or in similar exceptional cases requiring exceptional treatment, the Collector of the district would be justified in contracting with a grain dealer for the supply of grain on the works for a stated period and on terms to be mutually agreed upon.

VI.—Field Hospitals.

24. Assistant Surgeons or Hospital Assistants are deputed to these works by the Inspector-General of Hospitals, and their arrangements are looked after by the Civil Surgeon of the district. It is the business of the Public Works to construct field hospitals at sites selected by the Civil Surgeon, and on a plan approved by him. The plan must be as simple as possible, and so arranged that the whole can be burnt down when the structure is abandoned for a fresh one; while at the same time there must be provision for the patients to get quickly out of the enclosure if it catches fire while in use. This will be secured by forming one side of the enclosure of a mud, or clod, wall with a gateway in the middle, and kept quite clear of hutting. The other three sides may consist of huts; but if the enclosure is entirely surrounded by hutting, the occurrence of a fire will lead to many patients being burnt to death. All the grass hutting should be white-washed with a thin mixture of lime and clay.

25. There must always be a spare hospital ahead of the one in use, so as to be ready for an epidemic. An abandoned hospital must be immediately burned to the ground. If it has held patients suffering from any epidemic disease, the site of the burnt hospital should be sprinkled over with about six cubic feet of quicklime sifted evenly over it, and the whole then well sprinkled over with water enough to wet the lime thoroughly.

26. Sufficient attendants, carriers and others, should be supplied to the hospital assistant, or other officer in medical charge, according to the scale laid down by the Civil Surgeon in each case. Relatives of patients should not be allowed to swarm round them, and only so many admitted as the Civil Surgeon directs. No other relatives than those admitted under the Civil Surgeon's regulations should be given even a famine minimum wage so long as they idle at the hospital in pretended attendance on a patient. The hospital water supply should be worked by its own staff and not in conjunction with the general supply for the relief workers. This is an important point and it will require some insistence to keep the two quite separate.

VII.—Hutting.

27. The workers will ordinarily require no shelter excepting in the event of winter rain or, many months hence, when the hot winds become dangerous in some districts. The problem will be one of difficulty if the most practicable materials—thatching grass and *sirkhi*—become scarce. The difficulty will of course not arise if it is found possible to carry out the policy of contracting large relief works and withdrawing the people to their villages for employment on village works on the advent of the hot weather. But if impediments to this policy occur, the first practical point is to arrange, with the Collector's assistance and under the Commissioner's sanction, the order of works, so that as many as possible of them will be near villages from the middle of December till the end of January, and again near villages, or in wooded country, after the latter part of April. This will very materially reduce the number of workers to be hutted. For the rest there seems to be nothing better on a large scale than screens about 6′ long by 4½′ wide, made of very open bamboo trellis work, strongly tied and thatched with about 1½″ thickness of any thatching grass available. These screens, either in the open or on the side parts of road under construction, make suitable shelters.

28. The people are very ingenious in improvising shelter with such screens, and two screens will shelter six to eight persons, counting in little and big. *Sirkhi* screens may be more readily obtainable than grass in some places and will do as a substitute. Every work will have a number of men who can be profitably employed in making the screens. The question should be well considered and all due arrangements made: but the actual provision of shelter should be carefully kept down to the lowest requirements, as it is very easy to waste a great deal of money in providing an unnecessary amount of shelter, which the pupil will absorb and waste to any extent so long as they have not to pay for it. When shelter becomes necessary the screens must be given out to mates of gangs.

29. Every effort will be made to procure tents enough to shelter the officials connected with the works, but there will be many left unprovided for. These should be hutted in small grass huts with the walls plastered with mud on the inside, and all other surfaces whitewashed, both inside and out, with a thin wash of clay and lime, in about equal proportions, as a protection against fire. An experiment with a bundle of coarse thatching grass washed in this way will show the men what an effective protection it is. The huts should be 9′ × 6′ with the ordinary pent roof, and made in sections so that they can be readily dismantled and re-erected, and easily carried in an ordinary cart, or by coolies. The whitewash, and the mud plaster, should be renewed at intervals. The sides need only be 4′ high; any extra height wished for can be got by digging out the floor. The local staff of each 'charge' should be generally hutted in this way.

VIII.—Conservancy.

30. The conservancy of every hospital should be carried out by its own staff of sweepers under the directions of the Officer in Medical charge. For the staff there should be the usual screen and ditch, and the officer-in-charge should be instructed to have it well looked after for his own sake. It has not been found practicable to make any latrine arrangements which the workers can be induced to use. The most that can be done is to post a few stalwart men, of some rather domineering class, such as the Thákur, under a competent mate of their own class, to insist on the workers going at least 300 yards off the work in their morning walks. They should generally go to the east of the work, but if there is a village near on that side they should be made to go in the other direction. The Police cannot be spared for this work or advantageously employed on it. It is of great importance to the health of the workers, and if worried into it for a short time they at last accept it as an admitted custom (*dastúr*), and give very little more trouble about it. Any officer-in-charge who will take the trouble can enforce the system and keep it going.

31. There must always be deaths on these works; if unhappily an epidemic should burst out there will be numerous deaths, and the disposal of the dead is a matter that must be attended to. The workers will not attend to it properly: in general they have not the means, and many of them do not seem to care much more in the matter than to get rid of the body in some moderately respectable manner. They will bury a body just under the surface, or they will just singe it and throw it into any accessible running water. At every three or four miles of a relief work there should be a burying place for Hindus, and another for Muhammadans. The two places should, if possible, be on some locally accustomed spot, they should be far apart, and neither should be near a village, nor within half a mile of the work. Each should have a very small appropriate staff.

32. In an epidemic it is difficult to find wood enough to burn bodies. Professor Hankin's researches show the water of the Ganges and the Jamna rivers has an extraordinary power of destroying cholera germs, which is wanting in other river waters. If then either of these rivers is close at hand there seems to be no objection to friends disposing of the corpses in that river; but in any other case the body must be buried. At the police guard, or other convenient place,

there should be arrangements for the burial, free of charge, of every Hindu body which friends do not bind themselves to burn, or to carry to the Jamna, or the Ganges. For the Muhammadan cemetry there should be one or two grave diggers, preferably of the *Gorkand* class, who would keep a certain number of graves ready dug. The graves should be not less than 5′ deep, and the dead should be completely and decently covered in. Unclaimed bodies should be taken charge of by the police and buried.

33. If this organization is got into train from the first it will be ready against the occurrence of an epidemic, and it can then be extended to any required extent. But if a skeleton organization is not ready, then it cannot be improvised in the rush of an epidemic, and corpses will be thrown into every adjacent stream or *nullah*, or left lying about in the fields.

IX.—Organization of Relief Labour. The Gang.

34. The Code classification of the workers is given in article 66, and may be paraphrased as follows:—

A.—Able-bodied professional labourers accustomed to the kind of work they are engaged on.

B.—Able-bodied labourers, but not accustomed to that kind of work.

C.—Able-bodied persons who are not labourers.

D.—Persons who are weakly, but still fit for light employment.

All the officials in charge of a relief work are working under pressure; any unnecessary addition to their work reduces the stock of time and energy available for useful work. If he does his duty the most harassed man of all is the officer-in-charge, and every complexity of classification is a continual burden to him, and in a less degree to every other official connected with the work. As a matter of fact, niceties of classification cannot be attended to, and they furnish constant inducements to petty fraud. It is most desirable to reduce refinements of classification as much as possible.

It is found in practice that the number of workers under class A is inconsiderable, and for that and other reasons alluded to above the class need not be considered further. The vast majority of the workers are agricultural or other labourers and peasant farmers, and they rightly fall into class B. There is a sprinkling of class C. These persons are very largely utilized in the miscellaneous employments in connection with relief work, where they rightly receive the wage of class B, or in some cases a small addition to it; and the remainder is too small to classify separately. There is a larger proportion of class D (weakly persons), many of whom can work up into class B after a fortnight or so of fair feeding.

35. Having regard to the facts of the case as noticed above, it is better to omit classes A and C altogether, and to reduce the classification to the following terms:—

Workers.—Class B	Men,*	women, children.
Do. D	,,	,,
Dependants (gratuitous)	,,	,,

It will be seen from paragraph 59 below that the scale of wages errs, if at all, on the side of excessive liberality.

36. The children have to be divided into four grades for the purpose of giving them fairly proportioned wages. The best grading is in the following terms:—

I.—Worker—age apparently between 12 and 16 years. Above 16 years counted in as an adult.

II.—Worker—age apparently between 7 (completed) years and 12.

III.—Gratuitous—not in arms and age apparently under 7 years.

IV.—Gratuitous—children in arms.

All children over 7 years of age are to be counted as workers, unless so crippled that there is no likelihood of their filling out and working. All children under 7 completed years of age are to be counted as "dependants on gratuitous relief."

37. The manner of starting a relief work is as follows. The officer-in-charge and the principal men of his staff are on the spot. The work is ready marked out and all points of organization have been gone through with the officer-in-charge, who has himself spent a few days on a relief work unless this is the first opened in the district. There should be a police guard for the money chest, and to give assistance in other ways. The tools are kept in an enclosure near the work, a sort of 'zareeba' with a thorny wall or fence round it, and the storekeeper is hutted in it, with his note-book of issues and receipts ready by him. Somewhere close to the tools depôt is a large red flag on a tall bamboo, and that is the place to which new comers are told to gather together as they arrive, and here the gangs are made up. The morning

* This is for classification only; for wages see paragraph 59 below.

is full of work and gangs are best made up in the forenoon, commencing at about 10 o'clock, and the men started on the work in the afternoon. While the gangs are being made up the future gang *muharrirs* must be present, and also any gang *muharrir* whose numbers are very short on that day.

38. First select 15 able-bodied men fit to dig, and fellow villagers if possible, and stand them apart; then tell their women and children to stand with them; these will probably number about 50. There may, perhaps, be also one or two old men too feeble to work, who are dependant on some of the workers and must be let into that gang. There will then probably be about 67 *persons* in the gang altogether. Count out all the children under 7 (completed) years of age as non-workers, or 'dependants,' who will receive gratuitous relief, and also the one or two very feeble old men or women who belong to some one and are too weak to work. There will then probably be about 50 *workers* of sorts in the gang. Select weakly single men (still fit to work), women, or other strays (fellow villagers if possible), till the gang is made up to about 60 workers, in addition to the dependants who are unfit for work.

39. Next, select a 'mate' for that gang, from among the relief workers present, and a fellow villager if possible, and make the gang *muharrir* fill up the 'mate's list' on the back of the 'gang register' at once, as see paragraphs 62 and 63. It must be filled up at once by, or under the eye of, the officer-in-charge: the gang must be given a distinguishing number at once: and the gang number, mate's name, and *muharrir* to whom consigned, should be recorded in the note-books of the officer-in-charge and of the gang *muharrir* at the same time. The gang *muharrir* sends on the gang, under charge of his man, with a slip to the storekeeper to deliver certain numbers of tools, baskets, and *thappis* to the mate of the gang; these he also enters in his note-book.

40. Arrivals in the afternoon will be given food in accordance with Famine Code, article 79, and will be made up into next day's gangs.

41. People once formed into a gang must not be allowed to stray into others without special permission. Mates should be chosen with an eye to position among labourers, intelligence, and at least the appearance of being able to exercise some sort of authority among their people. During the selection of gangs it is necessary to keep in mind and provide for the requirements of the hour in the way of filling up depleted gangs, and of special labour, such as water drawers and carriers, water distributors, conservancy patrols, sweepers, &c. The latter must be drafted into the special gangs formed for those purposes.

42. As regards 'dependants' attention is invited to article 100 of the Famine Code. The proportion of little children and other dependants will often rise above 10 per cent. where whole families come on relief together. As regards the persons who may be admitted on to these works, see articles 79 and 80. These works are not intended for persons unable to do any work nd not dependant on a worker; for such there are the poorhouses. But if any such starving persons apply at one of the works, they should be fed for a day or two until an opportunity occurs of sending them on to a poorhouse.

43. The gang is the basis of all organization, and it must be kept as permanent as possible. No mate should be allowed to admit any new persons into his gang of his own authority. As soon as a gang has received its tools it must be marched on to a previously marked out piece of work, and it will thereafter be always treated as a unit. It will be drafted from one work to another, or from one part to another (as when workers are progressing along a road), as a unit, and in accordance with the procedure laid down in article 83 of the Famine Code, and with the gang registers written up to date.

X.—The Task. Setting out work, and getting it done.

44. The special gangs of water carriers, hospital attendants, conservancy men, and so forth, have their own special duties, and the practical mode of getting value from them is to take care there are no more of them than the work requires, and that they perform their duties efficiently. But the great mass of the workers are on a different footing. If the arrangements are complete there is any quantity of work for them to do. They are by no means inclined to do a stroke more for their daily wage than can be helped. The problem in working under the Famine Code is to find how much work they should do without being overworked, and to get them to do it.

45. Section 72 of the Code refers to its appendix D on the question of quantity, and the appendix contains rules for modifying tasks in accordance with the 'lift' and the length of 'lead.' Experience has shown us this is quite unnecessary. The people must be taken as they come, and the diggers must be distributed in the proportion they happen to bear to the fillers and carriers. It has always hitherto happened that the fillers and carriers were far too numerous for the diggers, and, instead of reducing the task because the fillers and carriers might be overworked, it has been found that it was only with a high lift and long lead that the diggers could do enough work to give them a proper amount of work. Under the system of wages

laid down by the Code—and no better seems to be practicable—a man's income is very greatly increased by bringing all his women and children on to the works. The Indian peasantry are very much alive to their own direct interests, and there is no reason to suppose that there will ever be much difference in the proportion of men to women and children. As a rule, then, it is safe to omit all calculations as to lift and lead in any work done by famine labour under this system of wages.

46. The problem is thus very much simplified. The task depends entirely on what the digger can excavate; whatever that quantity may be there will always be enough fillers and carriers to dispose of it. From this it follows that the effectiveness of the whole gang as an instrument of labour depends entirely on the effectiveness of the digger, and on him alone. If the digger gives a good day's work the whole gang has to do the same; and if he idles, no possible industry on the part of the remainder can make up for it. It is therefore only necessary to consider the quantity of work which a digger may be fairly called on to do, namely, the 'task,' and how to get him to do it.

47. Table A of appendix D, Famine Code, gives very fair tasks for men and women of classes A and B, and for men of class C. But with our soils and under the ystem of classification now adopted, these tasks require some re-arrangement, and the following table is accordingly prescribed.

Table I.—Task Work.

Excavation only. For diggers, men of class B.

Soil.	Daily task in cubic feet.		Remarks.
	Full.	Low.	
Soft earth, such as sandy loam	130	100	In the rare cases when a woman works as digger she should have a $\frac{2}{3}$ task.
Medium earth	110	80	
Hard earth and clay	85	70	
Stony soil, and black cotton soil when dry	85	50	

48. These are the tasks to be exacted. The task is in each case to be fixed by the District Engineer / District Surveyor under the instructions of the Divisional Engineer. When a gang is first started on work the low task for that kind of work is to be taken from the diggers, and it is to be gradually raised in a fortnight or so to a suitable task according to the soil and the strength of the workers. The full task is the ordinary one to be adopted. More may be obtained under favourable conditions, but these figures have been adopted as a safe limit which it would not be harsh to enforce by fines. The low task may be adopted under unfavourable conditions, climatic or otherwise. It is by no means intended that only the low task shall be adopted, or that it shall be the prevailing standard. If less than the low task is ever allowed, the fact must be reported by the Divisional Engineer to the Superintending Engineer, with full reasons for permitting the low task to be reduced. If the Collector of the district considers the task unsuitable, the District Engineer / District Surveyor will alter it on receipt of written orders to that effect from the Collector, but he will at once report the alteration to the Divisional Engineer and forward the Collector's order to that officer in original. The Divisional Engineer will forward the report to the Superintending Engineer for communication to the Chief Engineer.

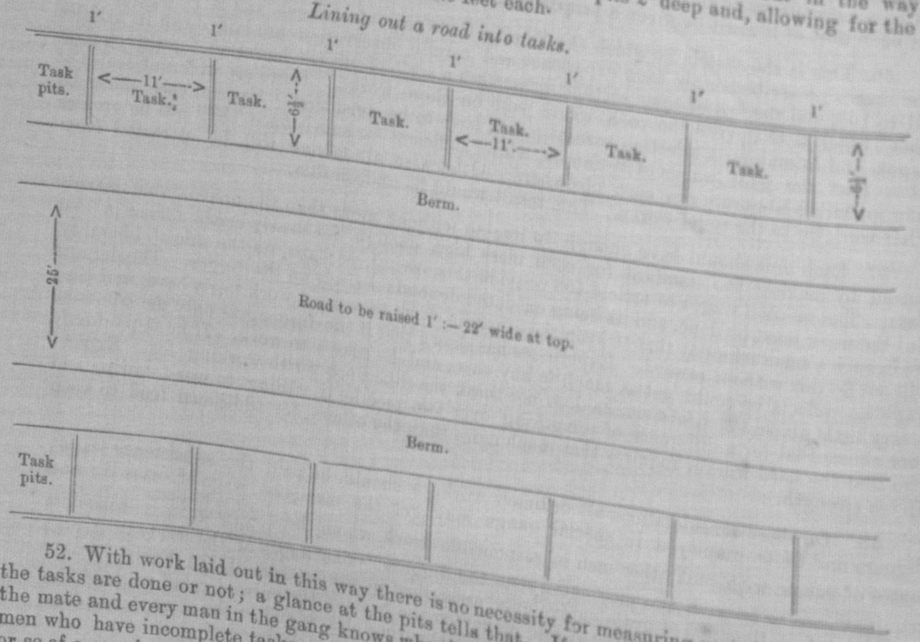
49. It is constantly asserted in some districts that such and such tasks cannot be got from the men, while in other districts very large tasks are completed without difficulty. The method on which the tasks are worked is the secret of success. Every task should be marked out separately, and the gang mate made to give one out to each digger overnight. The digger may then commence work at any hour he likes, and *must be at liberty to go off work as soon as his task is finished*. He must not be kept working at a portion of a general task, or at finishing up another man's. He then feels himself responsible for a certain piece of work, and knows that he may go, certain of his wage, as soon as it is done. A gang task marked out *en bloc* will never be done. The idlers have no individual responsibility brought home to them; and those who would work are demoralized by their example, and disheartened by having to do other men's work. It is the old disease of every form of communism that has yet been tried. Give every man his task, and his wage for doing it. Fine him for default if necessary according to the fine scale of paragraph 60 below.

50. All laying out of work should be planned with two objects as regards the workers: (I) to give every man an individual task; (II) to give every worker at least three days' work in one place before having to march on to another reach. This also prevents overcrowding the workers. To take an example. Suppose a road 22 feet top-width, to be embarked 1 foot in light sandy earth, by gangs with an average number of 15 diggers each, and doing a task of

130 cubic feet. Then 83 lineal feet of road embanking will give a gang one day's work, and a gang to every half furlong, or 330 feet, will give them nearly four days' work before they need shift on. Taking a gang as about 80 persons, all sorts, this will spread a 'charge' of 5,000 persons over a length of nearly four miles. One gang to every half furlong is a very good general rule to follow.

51. Laying out work on a road is simple enough and should be done well in advance of the workers. The setting out consists of two parallel lines for the embankment, and outside these two more such lines on each side to mark the pits. The distance apart of these last lines is of considerable practical importance, and should be such that pits of either 1′ or 2′ depth shall give a little more earth than is required for the road. The individual tasks are marked out by cross cuts between the pit lines, an interval of 1′ being left between every two tasks. The example of road given in the preceding paragraph would be marked out in the way sketched below, which will give just enough earth from task pits 2′ deep and, allowing for the slopes in pit-sides, the tasks will be 130 cubic feet each.

Lining out a road into tasks.



52. With work laid out in this way there is no necessity for measuring up to know whether the tasks are done or not; a glance at the pits tells that. If nearly all the pits are completed the mate and every man in the gang knows who the defaulters are, and it is best to fine only the men who have incomplete tasks, and to fine them only one to two pice each for the first week or so of a gang's existence. A few days later the mate should be fined as well; and if the deficiency still goes on the whole of the diggers in that gang should be fined. It will be found that the idlers either reform themselves, or leave the gang of their own accord. If the majority of the diggers have been slack in their work they should all be fined for it, and the mate as well. If the deficiency in their work has amounted to over 20 per cent. of the whole gang's tasks, all the adults and the mate should be fined. If individual tasks have been marked out this will soon bring about a reformation, for nearly all the women are relations of one or other of the diggers.

53. In embanking roads with dry earth it is very necessary to have the earth broken up very small, and there are plenty of people to do it. The made road should be constantly dug up and examined; if the earth has been left in clods it is always the fault of the mate, and the adult carriers and breakers. In that case these only (namely, all the working adults of a gang other than the diggers who have done their allotted tasks) should be fined, and not the diggers. A very few days of persistent, but not too severe, discipline of this kind will put almost any gang into shape; if it does not, the mate is of no use and should be turned off. But the discipline cannot be fairly applied unless *individual tasks* are marked out.

54. At the rear of every relief 'charge' there should be a finishing gang, one that has shown it has learned its work well and is under an intelligent mate. It will be the duty of this gang to properly finish up all irregularities left by the less skilful gangs in front. No particular task can be set for them, and the work very largely depends on the mate in charge, who should be a professional *tindal* on a monthly wage. The whole appearance of the work when finished depends on this part of it being properly attended to.

XI.—Wages.

55. Under ordinary conditions the income of a working family consists of the wages of its workers, and nothing more; the wage earner is the sole natural channel of wages. But one of the effects of a severe scarcity is to decrease ordinary employments, and also to destroy the usual proportion between the ordinary wages of a worker and the average wants of the family group he supports. When this becomes very marked, the State and private charity step in to save human life by giving extraordinary employment, and also by making up the wages of a family to something like its absolute necessities. The purpose in view is, not to increase any man's wage *per se*, but to increase the incomings of the family group in proportion to its actual necessities. The absolute necessities are closely proportional to the numbers and classification of the persons composing the group, and it thus becomes necessary to prescribe a separate wage for each member of the group. The family cannot be treated as a whole, but each unit of it must be given a proportionate wage.

56. This is the system on which the Famine Code regulates wages, and it is unavoidable. The wages prescribed after long experience and careful observation are laid down in articles 101 to 108, and the last of those sections prescribes a scale of wages based on 'grain equivalents' which is to govern the cash wages paid on these works. There are different scales of wages, and in making a selection several points have to be considered. Special care must be taken that the joint wages of a family, while sufficient for subsistence, shall not be greater than unskilled labourers can earn elsewhere. Otherwise all labour will be attracted from other work on to the relief works. This result would be undesirable.

57. Each unit should have enough to live on without more than the unavoidable margin caused by making the standard for each class high enough for nearly every person in that class. The *minima* wages of article 108 provide this, erring, perhaps, on the side of liberality. But the work must be done, and its being executed depends entirely on the digger. The diggers are in such a small minority that to keep the others in work they must work fairly hard, and they will not do this without reward. Experience has shown that if the digger gets only the *minimum* wage he reflects he could get as much in any case, and he ceases to work. If he is paid only a very little above the *minimum*, he does not think the difference worth working for. Experience shows that for a difference of something over two pice he is willing to work fairly, and also that the hard worker requires that much more than the others, for additional food to keep up his strength.

58. On these considerations all ordinary workers should be paid the subsistence wage; diggers and those employed in special gangs may get the *maximum* wage of class B; and mates of gangs, with such other men in responsible work whom the District Engineer / District Surveyor considers require it, are to be paid two pice more than the diggers. The wages of the workers are to be regulated by the scale of grain equivalents prescribed in section 108 of the Famine Code. These equivalents are to be converted into money on the basis of the current retail price of the staple grain in ordinary local consumption by the labouring classes and in the state, husked or unhusked, in which that grain is ordinarily sold by retail for consumption.

59. The following scale will therefore be used :—

Mates of gangs and other persons in responsible posts.	Six pice more than a digger.
Adult males, workers. Diggers and men in special gangs.	Nineteen *chataks* of grain.
Adult males.—Other workers, All classes.	Fourteen *chataks* of grain.
Women * diggers	Sixteen *chataks*.
Adult females not diggers.—All classes.	Thirteen *chataks*.
Male adult dependants	Twelve *chataks*.
Female dependants	Ten *chataks*.
Working children, grade I.—Over twelve and under sixteen years.	Ten *chataks*.
Working children, grade II.—Over seven and under twelve.	Six *chataks*.
Non-working children, grade III.— Not in arms and under seven years.	Three *chataks*.
Non-working children, grade IV.— Infants in arms.	One pice extra to the mother.

* Classed as B, but not given quite the maximum wage.

If the exact money equivalent of the preceding grain wages exceeds the nearest pice below by two pie or more, the next highest pice will be given. If the exact sum exceeds the nearest pice below by less than two pie, the next lowest pice will be given.

60. Workers who fail to perform the allotted task may be punished as follows:—

(*a*) by fine, provided that the grain ration (or its money equivalent) paid as wages shall not be less than the penal ration prescribed in article 103, Famine Code; or
(*b*) by payment as wages of the penal ration in cooked food at a State kitchen established on the work; or
(*c*) by removal from the work and sending them to the nearest poorhouse.

61. Wages are to be fixed by the District Engineer / District Surveyor in consultation with the Collector. They are not to be altered for variations of less than 10 per cent. in the price of food grains. Except-ing in case of urgent necessity, which should be immediately reported, they are not to be altered without previous reference to the Commissioner. For the first week of a gang's existence it may, if necessary, be paid up daily. By that time the gang will have established an account and credit with some *bania*, and the wages may thereafter be paid bi-weekly with advantage to every one. A table or ready reckoner showing the wages to be paid in accordance with the varying price of grain is given as Appendix VIII.

XII.—Reports and Accounts in the field.

62. The basis of all accounts is the 'gang register,' or it should be. The most convenient form for it is given as Appendix III. This should be printed in vernacular on a sheet of ordinary country paper rather larger than the pattern, and with columns for seventeen days. The paper should be mounted on cheap muslin, and on about half of the other side of the muslin should be pasted another piece of paper printed as shown on back of the example. This back part is called the 'mate's list.' Two such registers are kept going for each gang, not in duplicate but in alternate use. Together they last for well over a month.

63. When a gang is first formed (paragraph 39), the 'mate's list' is written up at once, and that copy of the "gang register" handed to the mate, who should be warned to take great care of it as his wages depend on it. The heading gives the mate's name and distinguishing number, and the name of the *muharrir* to whom consigned. Beneath is a nominal roll of the diggers, followed by one of the other adults of the gang, then a numerical list of the children of each grade. Lastly, a list of the tools to be supplied by the storekeeper. A separate slip containing an order for tools is sent with the mate, to be retained by the storekeeper as a voucher. The 'mate's list' is not to be kept up as a regular nominal roll, but is merely corrected from time to time as changes occur in the gang. The mate should not be permitted to have any persons in his gang who are not entered on the list by his *muharrir*. The officer-in-charge should check a few lists nearly every day. Every officer inspecting the gangs should check a few. The list gives very little trouble and is of constant use in examining gangs, and the entries in the register itself.

64. The first afternoon a gang is on the works its register is written up by the gang *muharrir* in whose charge it may be. There is no question of fines. He compares the persons present with the entries, enquires into any differences, and makes any necessary alterations. He pays a day's wages, writes up the second copy of register, and exchanges it for the first. He tells them about tasks and fines, and goes on. The sub-overseer has meanwhile pointed out the next day's tasks and told the mate what his duties are, including a word about distributing the tasks for next day overnight, conservancy, drinking water, tool repairs, and *banias'* shops.

65. After the first day the gang *muharrir* checks attendance in the morning, and fills in the attendance entries down to the second set of totals. He calculates and enters wages on the register, tells the mate what they come to, and signs on the line left for the purpose. Some time in the afternoon the sub-overseer, or work agent, in charge of that portion of the work examines the work done (if properly set out, the tasks seldom require actual measurement) and enters the quantity due, and that done, on the appropriate line. If there has been scamping or short work, he assesses fines as instructed in paragraphs 52 and 53 above, explains to the mate exactly what they are and why inflicted, and enters the fines and his signature below. He makes a note of all such entries in his own note-book. Later on that day the *muharrir* comes round again and pays up the gang individually (the payment may become bi-weekly), deducting the amount of fine, if any. He enters the net amount paid, or to be paid, and signs the regis-ter. On each day that he pays the gang's wages the *muharrir* takes the copy on which he has paid and gives the other to the mate. The mate always has one copy of the register, and does not give it up excepting on the gang's wages being paid in full, less fines. The *muharrir* is obliged to recover the fines as assessed by the sub-overseer or work agent, and has no power to

remit them. Only a written order of the officer-in-charge can remit the fines, and that order must be written on the register itself—this is necessary to prevent fraud. The copy taken away by the *muharrir* is submitted by him as his voucher for payments. Every such voucher requires to be examined by the officer-in-charge.

66. For purposes of classification and daily report the *muharrir* must keep a day-book in the form given as Appendix IV. It is a mere daily abstract from the gang registers for each day. He starts in the afternoon with a certain amount of cash, for which he leaves a receipt. At every gang he writes up his day-book; at some of them he makes payments, and in each such case he takes the gang register held by the mate and gives him the other copy in exchange. He enters all payments in his note-book of the day. On returning to the staff quarters he pays in the unpaid balance of money left in his hands and puts in the gang registers as vouchers for payments. The officer-in-charge and his sub-cashier make all necessary comparisons and entries, and return him the gang registers, signed against the last day they are paid to. Every head of a special branch should keep up these day-books if he is to pay his men himself, as perhaps the water foreman should, and also the officer in charge of the hospital.

67. The officer-in-charge abstracts all the day-books into his own day-book for purposes of classification and account. His book is the same as the *muharrir's*, except that, instead of the first two columns for the gang and mate, it has one column containing the *muharrir's* name; and the entries are copies of the, duly examined, *muharrir's* day-book totals. From this the officer-in-charge writes up Famine Code Form III. This must be written up daily without fail and despatched to the District Engineer / Surveyor on Monday morning. With regard to work on Sunday, and the payment of wages therefor, special attention is called to paragraph 2 of G.O., No. 249, of 26th November 1896, reprinted as Appendix I to these rules. The weekly returns will therefore be for the week ending with Saturday.

68. The officer-in-charge will despatch a daily report post-card to the District Engineer / District Surveyor, and also to the Collector and the Divisional Engineer if required. The form for this is given in Appendix V, and the cards should be supplied ready printed. He has also to submit to the Collector the reports described in articles 37 and 39 of the Code. Every additional account or report thrown on the "officer-in-charge" is a distinct hindrance to his work, and it is the duty of the Divisional Engineer to see that no clerical work not absolutely necessary is thrown on him, either by the demands of the divisional or the sub-divisional offices, the members of which have no judgment in such matters if not kept in check.

69. From the District Engineer / Surveyor the Chief Engineer requires a weekly report in a form already issued, and the Superintending Engineer requires one in the form which is given as Appendix VI. Both these forms are supplied ready printed and should be submitted with unfailing punctuality, and in accordance with instructions on them, from the time that relief works are opened under the Public Works Department. All famine relief forms should be locally printed under the orders of the Superintending Engineer and charged to Famine Relief contingencies.

XIII.—Checking Work, Numbers, and Payments.

70. It is as a safeguard against fraud, and an instrument of detection, that the gang register system of keeping the initial accounts first shows its full value. It is of course of no use without the personal element of a man who insists on its being kept up properly, and who will utilize it fully. Every petty official whose end would be served by confusion will try to spoil the registers and exaggerate the difficulty of keeping them up. This is so marked that an inability to keep the registers straight may be almost regarded as the sign of a rogue. At least the man is incompetent and therefore should go. If it is the officer-in-charge himself who fails to enforce method and a checkable system of record and accounts, there is the more reason why he should be replaced by a competent man.

71. The progress shown should be checked by test measurements extending over the whole work in some reach, the recorded progress of which can be disentangled from the remainder. For this purpose it is well to have all the accounts of a road, or other long work, closed up at every four miles or so, and a new start made.

72. The numbers are checked by counting the number of gangs at work along a road, &c., and sampling the entire entries in the *muharrir's* day-book by careful comparison of about 20 per cent. of the gang registers with the entries, and also with the numbers actually found present. Look through the gang register, and see whether there have been any recent curious fluctuations. If so, they require explanation, and the mate's list on the back will throw some light on the subject. The general accuracy of each of the day-books is thus checked in turn. If not satisfied over a *muharrir's* day-book it is best to stay there and obtain some tangible results before going further.

73. Supposing the day-books have been found fairly correct, after checking a certain number of totals and the detailed calculations, the totals are then compared with the entries made in the day-book kept by the officer-in-charge. The totals of this latter day-book are again checked and compared with the entries in Form III, and those again with the payments recorded in the cash-book. The cash-book itself is then carefully gone through as usual.

74. An examination should be thorough, but mostly in the way of sampling, unless something is lighted on, and in that case it should become very thorough indeed. The way in which the accounts and records are kept is often a very good guide to what one may expect to meet with. If they are kept in such a manner as to facilitate check, rigid sample checking will probably be found to be sufficient. If, on the other hand, the books are in confusion and practically useless for checking purposes, it will be well to have a very complete examination; for there is either carelessness which many will have taken advantage of, or there is worse. Every examination must be conducted with the greatest patience and consideration of the difficulties and pressure under which all are working. Unavoidable error is, however, quite a different thing from actual fraud or criminal carelessness, and the former at least can never be passed over. If enquiries establish a substantial presumption of fraud, the officer-in-charge must be at once removed by the District Engineer / District Surveyor; in case of carelessness the orders of the Divisional Engineer should be awaited, unless immediate removal is necessary in the interests of Government, or the workers. In either case the District Engineer / District Surveyor will forward a full report to the Divisional Engineer, and also inform the Collector of the action taken and the reasons for it. The Divisional Engineer will report the matter to the Superintending Engineer for such further action as may seem to be desirable.

LIST OF APPENDICES.

I.—G.O., Scarcity Department, No. 249, dated the 26th November 1896.
II.—Professor Hankin's instructions for the disinfection of wells.
III.—The Gang Register and Mate's List.
IV.—The *Muharrir's* day-book.
V.—Daily Report Post-Card.
VI.—Weekly Report for Superintending Engineer.
VII.—Form of Appointment for Work Agent.
VIII.—Wages Ready Reckoner.

APPENDIX I.

From H. F. EVANS, Esq., Chief Secretary to Government, North-Western Provinces and Oudh, to the Commissioners of Divisions, North-Western Provinces and Oudh, dated the 26th November 1896, No. 249/S—8.

I am directed to re-produce below, for information and guidance, the following extract from paragraph 28 of Resolution No. 3945-S./I.—58, dated 20th October 1896, on scarcity and relief operations in the North-Western Provinces and Oudh during the spring and summer of 1896, and to request that the points (i) to (xvi) noted may be regarded as instructions and carried into effect so far as practicable.

2. In regard to article 91 of the Famine Code, I am to say that practical experience has shown that demoralizing consequences flow from the payment of a wage to capable workers for which no labour is rendered. It would seem that the article was introduced into the Code to prevent the establishments being called on to measure up work or make payments on the Sunday, not because it was considerd right to prevent Hindus or Muhammadans from working on a day which for them is not sacred. But there should be no difficulty in so arranging that work done on a Sunday should be laid out on the preceding Saturday and not measured or paid for before Monday. The Lieutenant-Governor therefore desires that no wage shall be paid for Sunday to any one, not being a "dependant," who does not earn it by doing the prescribed task. For prescribed work done on Sunday the labourer will be paid on the next pay day. It shall be in the discretion of the gangs to suspend work on Sunday if they wish, forfeiting their wage for that day if they do.

3. The following instructions will be observed by all officers engaged in relief operations:—

(i) Test works fail to fulfil their object if full tasks are not exacted, and if wages are not regulated with reference to the provisions of Chapter VII of the Famine Code. Close supervision is therefore essential.

(ii) Where test works show the necessity of relief works, the management of the latter, not being of the kind specified in Article 65 (*a*), Famine Code, should be entrusted from the outset to the Public Works Department.

(iii) Relief works of the kind specified in Article 65 (*a*), Famine Code (*i.e.*, "works specially intended for the relief of the agricultural population in the vicinity of their villages") are best carried out through the agency of the village landlords and headmen. The quantity of work to be done can usually be accurately calculated beforehand: and the cost fixed with reference to a fair task and the current price of food. Advances can then be made and the account cleared up on completion of the work.

(iv) Article 77 of the Famine Code provides that over each separate work managed by the Public Works Department shall be placed an "officer in charge." The number of labourers under an "officer in charge" should ordinarily not exceed 5,000; and if there are more than 3,000 there should also ordinarily be two sub-overseers or work agents. In every case each sub-overseer or work agent should have an intelligent assistant or "mate" to help him to lay out the work. For every five or six "charges" an inspecting officer of the standing of a Public Works upper subordinate is required.

(v) Officers of the náib tahsíldár class or of similar standing on the regular establishment of Government should, whenever possible, be employed as "officers in charge." They should be placed at the disposal of the Public Works Department and employed where required, postings being made by the Superintending Engineer.

(vi) Reserves of tools and baskets should be established at convenient centres, whence they can quickly be sent where wanted; and as baskets wear out quickly and take time to procure, arrangements should be made in advance for their supply.

(vii) On relief works the "gang system" should be rigidly enforced from the very outset, and gang registers kept up. A gang register is a card or piece of stout paper containing the names and classification of all persons in the gang. Any gang can thus at any time be checked independently of other gangs, and by "sampling" a few gangs, the whole work may be effectively checked. These great advantages do not attach to the alternative "ticket system," under which vouchers are delivered to individuals in the morning, to be exchanged for money in the evening. Under the "ticket system" it is obligatory to count and classify at a particular time in the afternoon the whole of the persons present on a work, in order to obtain a satisfactory check; and this has been found to be not only extremely laborious, but usually impracticable.

(viii) Wells likely to be used for drinking water by labourers on relief works should be examined and, if found pure, should be guarded from contamination for a week before required, and the water-supply arrangements perfected before the labourers arrive. Foul wells should be absolutely closed. Should cholera break out, the wells should be disinfected at intervals of two or three days with permanganate of potash, until the labourers are split up and drafted off to other works.

(ix) From the labourers Bráhmans should be selected to draw water from the wells for Hindus, and Kahárs to distribute it. The vessels employed in drawing and distributing the water should be ordinarily of metal and scrupulously clean. Kerosine tins have been found to be most useful and acceptable.

(x) A superior medical officer should inspect periodically (1) the relief labourers on relief works not of the Article 65 (*a*) class, (2) the sanitary and medical arrangements in connection with such works, and (3) poor-houses and hospitals.

(xi) The Famine Code (section 85) provides for the erection of latrines. These should usually be on the trench system and provided with grass screens. A line of flags and posts should be placed all round each relief work, and 300 yards from the same, and great care should be taken that no nuisances are committed within the area enclosed by such flags and posts.

(xii) Medical officers in charge of hospitals on relief works should very carefully watch for the occurrence of any cases of relapsing or famine fever, and immediately isolate any such cases. Provision for the immediate isolation of cases of cholera, small-pox, or other epidemic disease should be made at each work. Grass huts, which can be subsequently burnt, will usually be the best form of isolation hospital.

(xiii) Article 87 of the Code provides for daily, bi-weekly, or tri-weekly payments (with certain exceptions). Wages should ordinarily be paid twice a week. Bi-weekly payments save the labourers a daily wait until a late hour on the works. They also reduce the difficulty of providing a sufficient supply of copper coin, as small silver coin can then be used also. But bi-weekly payments can only be introduced if "gang registers" are maintained in perfect order. (The difficulty, which is sometimes serious, of providing large quantities of copper coin, can be reduced by arranging with the gram sellers on the works to exchange copper for silver daily.)

(xiv) No change in wages should be made if prices vary by less than 10 per cent., and ordinarily no change should be made unless with the previous sanction of the Commissioner of the division (or Famine Commissioner, if one is appointed).

(xv) When a variation in prices of food grain necessitates an alteration in wages, notice of the new rate of wages should be sent to the District Engineer and not to the "officers in charge."

(xvi) No incomplete work should be closed by the controlling authorities, except on account of sickness, unless seven day' notice be previously given to the Divisional (Executive) Engineer to break up the staff and close the work.

APPENDIX II.

Directions for treatment of wells with permanganate of potassium, as a means of checking epidemics of cholera.

Permanganate of potassium is a crystalline salt-like substance, of a purple colour, in whose preparation only mineral substances are employed. Hence its use in wells need not be objected to by the strictest Hindu.

Put one or two ounces of the solid substance into a *dol* or bucket that has been filled with water drawn from the well about to be treated. Stir it up, and pour the red solution thus produced into the well, leaving the portion of permanganate that is not yet dissolved at the bottom of the *dol*. Lower the *dol* into the well, fill it with water, draw it up, pour back the water as before. Repeat the process till all the permanganate has been dissolved. After half an hour draw up some of the water and examine it. If a red colour is still present, enough has been added. If the red colour has disappeared, then more permanganate should be added to the water in the well. In all cases enough permanganate should be added to produce a faint red colour lasting for 24 hours.

If the water in the well is bad, more permanganate will be necessary. In such a case it will be found that the strong red colour at first produced quickly changes to brown, and then fades away. This is because the permanganate destroys dirt and is destroyed by it. Therefore if the water in the well is clean, a smaller quantity of permanganate will be necessary. From one to four ounces of permanganate will be found to be enough for ordinary wells. If more permanganate is added than is enough to produce a faint permanent red colour, it is likely that frogs that may be in the well will be killed. This will in a few days give the water a putrid taste. If the quantity of permanganate is not enough to produce a faint permanent red colour, it is not likely to do any good. If possible, the permanganate should be added at night in order to leave the wells undisturbed as long as possible. The water will be fit to drink on the following morning. If on the following morning a red colour is still present, the water may have an unpleasant taste, but it is perfectly harmless. If the inhabitants do not like the taste, they should be instructed to pump out the water until the colour vanishes. Always care should be taken to treat with permanganate all the wells in the place, not only those used for drinking, but also those used for washing purposes. Care should be taken to explain to the inhabitants the reason of using permanganate, and they should be warned against using water from other sources that have not been treated. If one well is required for immediate use, perhaps it would be advisable to add to it a quantity of permanganate, and to employ *bhishtis* to draw out the water until the colour has disappeared, but this well should again be treated with permanganate on the following day when the other treated wells are brought into use.

Usually water is kept stored in the houses for washing or other purposes in *gharas*, &c. This should be poured away, and, if possible, the inhabitants should be persuaded to wash out their *lotas* and other vessels with water containing permanganate. Unless this is done, isolated cases of cholera are likely to occur even four or five days after the treatment of the wells. I have had experience of a case in which a woman was attacked with cholera after treatment of wells, because she was frightened of touching the red water in the well, and drank water that had been stored in the house and that had been taken from the well before the addition of the permanganate.

A pamphlet explaining the use of permanganate, entitled "The Prevention and Cause of Cholera," may be obtained from the undersigned in Urdu, Hindi and English. It is being translated by various Local Governments into Burmese, Tamil, Telugu, Malayalam, Uriya, Marathi, Gujrati, Kanarese and Sindhi.

E. H. HANKIN,
Chemical Examiner and Bacteriologist,
N.-W.P. and Oudh.

APPENDIX III.

Gang Register of No. ____ *Month* ____ *District* ____

Name of Work. ____ *Date* ____

Items.	Day and daze.	Wage in pice.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
Workers. Men, E. diggers and special ..																
Do. B. others ..																
Do. D. ..																
Women, B. diggers ..																
Do. B. others ..																
Do. D. ..																
Children, I (12 to 10) ..																
Do. II (7 to 12) ..																
Totals ..																
Gratuitous. Men ..																
Women ..																
Children, III* ..																
Do. IV (Infants) ..																
Totals ..																
Signature of gang *Mukarrir*																
Task in cubic feet																
Fine inflicted																
Number of persons and amount																
Signature of Sub-Overseer																
Amount paid																
Signature of gang *Mukarrir*																

due. done.

No. Amount.

NOTE.—Officer-in-charge, or his sub-cashier, to sign against the last payment recouped to the gang *Mukarrir*.

NOTE.—Continue the form to hold 17 days.

* Grades III and IV of the children not to be separately entered so long as they get the same wage.

MATE'S LIST.

(To be pasted on the back of the Gang Register.)

*Gang No.*_____ *Mate's name*_____

*Name of Gang Muharrir*_____

Muharrir to sign and date entries and alterations on each occasion.

APPENDIX IV.

Day and Date.

District.

Gang Muharrir.

Day-book of Name of Work

Number of Gang.	Name of Mate.	Entries.	Worker attendants. Men. Mate A.	Men. Digger B.	Men. Others B.	Men. Class D.	Men. Total.	Women. Digger B.	Women. Others B.	Women. Class D.	Women. Total.	Children. Grade I.	Children. Grade II.	Children. Total.	Gratuitous. Men.	Gratuitous. Women.	Gratuitous. Children. Grade III.	Gratuitous. Children. Grade IV.	Gratuitous. Children. Total.	Grand total of workers.	Grand total, number and wages.	Task in cubic feet. Due.	Task in cubic feet. Done.	Fine inflicted.	Balance due to gang.	Date on which paid.
		Daily Wage.																								
		Nos.																								
		Amounts.																								
		Nos.																								
		Amounts.																								
		Nos.																								
		Amounts.																								
		Nos.																								
		Amounts.																								
		Nos.																								
		Amounts.																								
		Nos.																								
		Amounts.																								
		Nos.																								
	Total ..																									

Signature of Muharrir.

Note.—Money entries to be in red ink.

APPENDIX V.

Famine Relief Daily Report Post-Card.

(Forwarded daily to District Engineer and to Divisional Engineer, and Collector if required.)

Famine Relief . . . . District. . . . . The name of the district is to be ready printed on each post-card.
Daily Report for _____ 1896.
Work _____

Items.		Workers.	Gratuitous.
Men,	No.		
Women,	No.		
Children,	No.		
Total,	No.		
Total Wages	Rs.		

Quantity of work done, cubic feet.
Remarks

Posted on date _____ 1896.

The address is ready printed on the front of each post-card and also a place for signature of the sender, in most cases the officer-in-charge.

APPENDIX VI.

Famine Relief.

Week ending Saturday,

The _____ 189 .
_____ *District.*
_____ *Division.*

No. _____ *dated* _____ 189 .

Forwarded to the Superintending Engineer, _____ Circle, Provincial Works, N.-W.P. and Oudh.

Notes for preparation of the form.

1.—The District Engineer / Surveyor will fill up the form on reverse and forward it on Saturday night to his head clerk for completion as within from office records.

2.—The return will be completed by head clerk and despatched direct to Superintending Engineer by Wednesday at latest.

3.—The serial order of works, column 1, should be kept the same, each new work starting with a new serial number and keeping it till closed.

4.—If wages are given for Sunday, the attendance for Sunday must be counted in as well (*vide* paragraph 67 of rules).

5.—All entries in columns 12 to 15 must be to the nearest rupee, omitting fractions of a rupee.

6.—The abstract on front page will be filled in by Superintending Engineer's Office.

ABSTRACT.

Week's wages to workers only (total at foot of column 12) .. Rs. _____
Quantity of work done (total at foot of column 11) ...Cubic ft. _____
Rate per 1,000 cubic feet ...Rs. _____
Number of units relieved (total at foot of column 9) ...No. _____
Wages and gratuitous relief for week (totals of columns 12 and 13 added together) ...Rs. _____
Rate per unit ... ...pies _____

WEEKLY REPORT FOR SUPERINTENDING ENGINEER.

______ District. Relief Works. ______ Division.

Progress Return for Week ending Saturday ______ 189 .

Serial number.	Name of work.	Total of all classes employed.			Total of all classes gratuitously relieved.			Grand Total of all persons on the work.	Work done during week.		Payments during week.				Capacity for further employment at date.		Remarks.
		Men.	Women.	Children	Men.	Women.	Children.		Nature.	Quantity.	Wages.	Gratuitous relief.	Other items.	Total.	Number of persons.	Period in days.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Totals ..																

Dated at ______, *the* ______ *of* ______ 189 .

Head Clerk for District Engineer / District Surveyor.

WEEKLY REPORT BY S. D. O. FOR PERIOD ENDING SATURDAY, ______ 189 .

1. Condition of the relief workers.

2. Outburst of disease.

3. Efficacy of food and water supply arrangements. Grain used as basis of wages, and its price in seers per rupee.

4. Sufficiency of staff and organization of gangs.

5. Succinct notes on work personally inspected, and anything which should be brought to notice on the F. R. Works.

Dated at ______ }
The ______ 189 . }

District Engineer / District Surveyor.

7

APPENDIX VII.

NORTH-WESTERN PROVINCES AND OUDH PUBLIC WORKS DEPARTMENT.

Form of Appointment of a member of the Work Establishment.

[Manual Chapter 1, Paragraphs 615 to 624.]

(To be prepared and signed in triplicate, one copy to be given to the person appointed, one copy to be transmitted to the Examiner, Public Works Accounts, and one copy to be recorded in the office of the authority making the appointment.)

From

The SUPERINTENDING ENGINEER,

Public Works Department,

To

____

____

No. ________

Dated at __________ *the* ________ *of* ________ 189 .

Under sanction conveyed in G.O., No. ______ dated ________, you are hereby appointed a member of the Work establishment of the ________ Division, Public Works Department, in the North-Western Provinces and Oudh, as a ________ under class ______ of paragraph 619 of the Manual of Orders in the Buildings and Roads Branch of the Public Works Department, on a consolidated salary of Rupees (______) ______ per month, with effect from the morning of the day you enter upon your duties under the District Engineer/Surveyor of ________ to whom you should report yourself without delay.

2. Your appointment will cease on receipt of a written notice from the District Engineer/Surveyor. If he considers your conduct and work have been satisfactory, he is empowered to then pay you a sum equivalent to your salary for ten to fourteen days in lieu of travelling allowance to enable you to return home. This cannot be claimed as a right.

3. You are liable to summary dismissal at any time without notice for serious misconduct or incompetence proved to the satisfaction of the District Engineer/Surveyor.

4. Should it be desirable to retain your services after the cessation of the work or works on which you were engaged, you will be placed in charge of such works by the District Engineer/Surveyor.

5. While in Government employ you will be subject to and governed by the Rules for the time being in force in the Public Works Department, supplemented by such other orders as you may from time to time receive from the officer under whom you are serving.

6. Your salary is consolidated and includes all charges, and you will not be entitled to any travelling or other allowances.

7. This appointment is cancelled should you fail to join by __________

____

Superintending Engineer.

(Declaration by person appointed.)

I hereby accept the appointment conferred on me in the above order, the terms of which I clearly understand and agree to; and I hereby bind myself to observe and abide by the Rules referred to in paragraph 5 of the said order.

(Signature) ________________

Dated at ________ *the* ________ *of* ________ 189 .

APPENDIX VIII.

Wages Ready Reckoner.

Table showing the wages to be paid to the various classes of persons on Famine Relief Works (paragraphs 59 and 60), being the money equivalents payable on the basis of the current retail price of the staple grain in ordinary local consumption by the labouring classes, and in the state husked or unhusked in which that grain is ordinarily sold by retail for consumption (paragraph 58).

Description of persons in receipt of relief.	Basis of the wage.	Retail price of the ordinary grain as above. 12 *sirs* per Re.	11 *sirs* per Re.	10 *sirs* per Re.	9½ *sirs* per Re.	9 *sirs* per Re.	8½ *sirs* per Re.	8 *sirs* per Re.	7½ *sirs* per Re.	7 *sirs* per Re.	6½ *sirs* per Re.	6 *sirs* per Re.	5½ *sirs* per Re.	5 *sirs* per Re.
		The wages to be paid. A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.	A. p.
Workers.														
Mates of gangs and other workers in responsible posts.	Six pice more than a digger.	2 0	2 3	2 3	2 6	2 6	2 9	2 9	3 0	3 3	3 6	3 9	4 0	4 3
Adult males. Diggers and men in special gangs ..	19 *chataks* of grain ..	1 6	1 9	1 9	2 0	2 0	2 3	2 3	2 6	2 9	3 0	3 3	3 6	3 9
Adult males. All other workers	14 *chataks* of grain ..	1 3	1 3	1 3	1 6	1 6	1 6	1 9	1 9	2 0	2 0	2 3	2 6	2 9
Adult females. Diggers	16 *chataks* of grain ..	1 3	1 6	1 6	1 9	1 9	1 9	2 0	2 0	2 3	2 6	2 9	2 9	3 3
Adult females. All other workers	13 *chataks* of grain ..	1 0	1 3	1 3	1 3	1 6	1 6	1 6	1 9	1 9	2 0	2 3	2 3	2 6
Children. Grade I (over 12 and under 16 years) ..	10 *chataks* of grain ..	0 9	0 9	1 0	1 0	1 0	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0
Children. Grade II (over 7 and under 12 years) ..	6 *chataks* of grain ..	0 6	0 6	0 6	0 6	0 9	0 9	0 9	0 9	0 9	1 0	1 0	1 0	1 3
Dependants.														
Adult males	2 *chataks* of grain ..	1 0	1 0	1 3	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0	2 3	2 3
Adult females	10 *chataks* of grain ..	0 9	0 9	1 0	1 0	1 0	1 3	1 3	1 3	1 6	1 6	1 9	1 9	2 0
Children. Grade III (not in arms under 7 years) ..	3 *chataks* of grain ..	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 6	0 6	0 6	0 6	0 6
Children. Grade IV (infants in arms)	One pice extra to the mother.	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3	0 3

Order—No. 14, Revenue, dated 9th January 1897.

Miscellaneous.

Communicated to the Board of Revenue and all Collectors for information in continuation of G.O., No. 675, dated 27th November 1896.

(True Extract.)

Ag. Secretary to Government.

To the Board of Revenue (Revenue Settlement, Land Records and Agriculture).
„ all Collectors.
„ the Public Works Department.
„ the Surgeon-General with the Government of Madras.

Exd. T. K. Narayana Aiyangar.

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