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IRRIGATION DEPARTMENT
ABSTRACT

WORKS - IRRIGATION DEPARTMENT - Including Irrigation Projects Wing) - Yardsticks of work load for sanction of sections, sub-divisions and divisions - Revised norms fixed - Orders issued.

IRRIGATION DEPARTMENT

G.O.Ms.No.402

Dated:8-10-82.

Read the following:-

1. G.O.Ms.No.1167, Transport, Roads & Buildings Dept., dt.27.10.1975.
2. From the Engineer-in-Chief, Er.No.Rc.F1/15793/74, dt.25.11.1981.
3. From the Chief Engineer(Inv), D.O.Lr.No.Rc.H2(1)/10522/80, dt.6.1.1982.

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O R D E R:

Government have reviewed the yardsticks which were fixed in the G.O. first cited for purposes of sanction of staff to be deployed on works in the Irrigation Department including the projects Wing, as there has been increase in the cost of the works due to escalation in the cost of materials and labour charges, and after careful consideration in consultation with the Engineer-in-Chief, and Chief Engineer (Inv), fixed the following revised norms to suit the present day requirements:-

I) MAJOR IRRIGATION:

a) Works Divisions:

- i) For headworks and canals of the capacity of 50 cum³/Sec, a works outlay of Rs.1.5 crores per year.
- ii) for canals between 50 cum³/ sec. and 15 cum³/ sec, a works outlay of Rs.1.00 crore per year.
- iii) Canals below 15 cum³/ sec. and above one cum³/sec, a works outlay of Rs.50 lakhs; and,
- iv) below one cum³/sec. a works outlay of Rs.25 lakhs.

b) For every circle, which has got 4 or 5 works divisions supporting staff of one Designs Division and one Quality Control Division may be sanctioned;

c) For every 2 circles, in a major project, the ancillary staff of one stores Division and one Mechanical Division may be sanctioned;

d) for an outlay of Rs.75 lakhs on land acquisition and rehabilitation, one land acquisition division may be sanctioned: and.

- a) for execution of field channels with a discharge of 0.04 cumecs, one works division may be sanctioned for an outlay of Rs.20 lakhs.

2. MEDIUM IRRIGATION:

- a) a norm of Rs.75 lakhs may be adopted for a works Division for head works;
- b) As the canals under Medium Irrigation Projects are all below 15 cumecs, a works outlay of Rs.50 lakhs may be adopted for canals. works Divisions may be sanctioned as in the case of Major Projects;
- c) For the field channels with a discharge of less than 0.04 cumecs to be excavated for medium projects an outlay of Rs.20 lakhs per division is fixed; and,
- d) The Supporting staff like Quality Control, Designs and Stores etc., are included in these works Divisions themselves.

3. MINOR IRRIGATION:

An average outlay of Rs.50 lakhs per division.

4. AYACUT MAINTENANCE:

- a) For compact deltas like the Godavari and Krishna deltas a norm of 1.00 lakh hectares per division;
- b) In projects like K.C. Canal, Tungabhadra LLC, Tungabhadra HLC, N.S. Right and Left Canals where the ayacut is not compact and the length of the canals is very long, a norm of 50,000 to 75,000 hectares per division for maintenance of ayacut in the major projects with canal systems; and,
- c) For the maintenance of Medium Projects and minor Projects one Division for every district.

5. INVESTIGATION:

The norms prescribed and followed in the Nagarjuna-sagar project for investigation of canals and the distributary system as indicated in the annexure to this order may be adopted.

2. All the Chief Engineers under the administrative control of Irrigation Department including the Irrigation (P.W) Department and the Engineer-in-Chief, are requested to work out the strength in terms of these revised norms and adjust them in the existing units. In respect of the surplus staff, after making the above exercise should be identified for absorption elsewhere, where new staff is required, proposals should be submitted to Government for determining the need and to sanction the staff that is required in due course.

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3. Government direct that the above norms should be deemed to have come into force with immediate effect.

4. This order issued with the concurrence of Finance & Planning (Exp.PW) Department, vide their U.O. No.2386/1011/Exp.PW/, dt.8.10.82.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

K.V. NATARAJAN
Secretary to Government.

To
All Engineer-in-Chief, Hyderabad.
All the Chief Engineers under the administrative control of Irrigation Department including Irrigation (P.W) Dept.

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/Forwarded by order/

Sd/- xx xx
Section Officer.

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YARDSTICKS FOR INVESTIGATION OF IRRIGATION PROJECTS

Annexure to G.O. Ms. No. 402, dt. 8.10.82.

FIELD WORK

1. Block levelling, levels at 100 M. intervals:

Out-turn: (per S.O. day)

a) Plain area	60 Hectares.
b) Obstructed area/Light Jungle area/Undulated country	30 "
c) Thick jungle area.	15 "

2. Net levels at 15 m interval or 30 M. interval.

Out-turn (per S.O. day)

	<u>For 15 M Interval</u>	<u>For 30M Interval</u>
a) Plain area	4 Hect.	16 Hect.
b) Obstructed area/light jungle area/ undulated country	2 "	8 "
c) Thick jungle area	1 "	4 "

3. Longitudinal survey (Levelling only) with levels at 30-M. interval including intermediate levels at closure intervals to define actual configuration of stream etc.,

Out-turn (per S.O. day)

a) Plain area	3.00 Km
b) Obstructed area/Light jungle area/undulated country	1.50 Km.
c) Thick jungle area	0.75 Km

4. Chain survey with prismatic compass.

Out-turn (Per S.O. day)

a) Plain area	3.00 Km
b) Obstructed area/Light jungle area/undulated country	1.50 Km
c) Thick jungle area	0.75 Km

5. Cross section of bund, stream and existing channels at 30 M. apart with levels at 3 M intervals.

Out-turn (per S.O. day)

a) Plain area	1.00 Km
b) Obstructed area/Light jungle area, undulated country	0.50 Km.
c) Thick jungle area	0.25 Km

6. Cross section with levels at 30 M. intervals.

Out-turn (per S.O. day)

a) Plain area	3.00 Km (Measured along the C.S.)
b) Obstructed area/light jungle area/undulated country.	1.50 Km -do-
c) Thick jungle area	0.75 Km -do-

The out-turn is for taking C.S. levels at 30 M interval. However, if the interval is reduced, the out turn also be reduced proportionately. If the levels are taken at 20 M. Interval the out-turn may be reduced to 2/3rd of respective out-turn, subject to minimum out-turn specified under item (5).

Double check Bench Mark carrying and establishing Bench Marks enroute.

Out-turn (Per party of 2 S.Os day)

- | | |
|--|----------|
| a) Plain area | 1.50 Km. |
| b) Obstructed area/light jungle area/Undulated country | 0.75 Km. |
| c) Thick jungle area | 0.40 Km. |

8. Fly levels:

Out-turn (per S.O. day)

- | | |
|--|----------|
| a) Plain area | 3.00 Km. |
| b) Obstructed area/light jungle area/Undulated country | 1.50 Km. |
| c) Thick jungle area | 0.75 Km. |

9. Stadia surveys (per S.O. day)

a) Out-turn.

- | | |
|---|----------|
| a) Plain area | 3.00 Km. |
| b) Obstructed are/Light jungle area/Undulated country | 1.50 Km. |
| c) Thick jungle area | 0.75 Km. |

10. Alignment with compass.

Out-turn (per S.O. day)

- | | |
|--|----------|
| a) Plain area | 3.00 Km. |
| b) Obstructed area/light jungle area/Undulated country | 1.50 Km. |
| c) Thick jungle area | 0.75 Km. |

11. Survey of base line with Theodolite:

Out-turn (per S.O. day)

- | | |
|---|----------|
| a) Plain area | 3.00 Km. |
| b) Obstructed area/ light jungle area/Undulated country | 1.50 Km. |
| c) Thick jungle area | 0.75 Km. |

12. Preliminary investigation of main canals:

1.6 Km per S.O. month.

13. Preliminary Investigation of Branch Canals:

3.2 Kms. per S.O. month.

14. Alternative alignment of Main Canals:
6.4 Kms. per S.O. month.
15. Alternative alignment of Branch Canals.
8.0 Km per S.O. month.
16. Detailed final survey for detailed investigation of
Main canal: 4.8 Km per S.O. month.
17. Detailed final survey of Branch Canal:
8.00 Km per S.O. month.
18. Site Survey of Major masonry works of Main canal:
2/3 Number per S.O. month.
19. Site Survey of Major masonry works of Branch Canal:
2 Nos. per S.O. month.
20. Site Survey of Minor Masonry works:
5 Nos. per S.O. month.
21. Alignment of field channels:
12.8 Kms. per S.O. month.
22. Establishment of Bench mark,
16 Kms. per S.O. month.

II. OFFICE WORK:

23. Preparation of Hydraulic particulars of Main canal.
1.6 Km per S.O. month.
24. Preparation of Hydraulic particulars of Branch Canal:
4.8 Km per S.O. month.
25. Preparation of Earth Work estimate for canals and bund.
For main canal 1.6 Km per S.O. month.
For Branch canal 6.4 Km per S.O. month.
26. Design of culverts, Head sluices, syphons, aqueducts
and similar works including preparation of drawings.
For Main canal 2 Nos. per S.O. month.
For Branch Canal 4 Nos. per S.O. month.
27. Design of Road Bridges including preparation of drawings.
For Main Canals 2 Nos. per S.O. month.
For Branch Canal 4 Nos. per S.O. month.
28. Estimating of masonry works:
For main canal and Branch Canals 4 Nos. per S.O. month.

NOTE: 1. For surveys in the river bed comprising of wide stretches of sandy bed with out - crop of rock, the yardsticks may be taken as 50% of the out-turn of the plan area.

- i) The above out-turn does not include shifting of camps and journey days.
- ii) One technical Maistri for a party of two Supervisors may be employed for assisting the investigations.
- iv) If due to non-availability, the Supervisor is not provided with the attender/attendant a survey lasker may be provided.
- v) The above yardsticks are based on the assumption that each sub-division is allotted with one jeep for investigation work.

Sd/- xx xx xx
Section Officer.

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