



e file No. 259/7/2019-Biogas
Government of India
Ministry of New and Renewable Energy
(Biogas Division)

Room No 604, Phase-I,
Atal Akshya Urja Bhawan, (AAUB)
Opp. to CGO Complex,
Lodhi Road, New Delhi-110003.

Dated: 31.07.2023

OFFICE MEMORANDUM

This is in continuation of MNRE's Request for Proposal (RfP) invited online during the month of January, 2020 for new design of small biogas plants for consideration for approval under this Ministry's Biogas Programme. The undersigned is directed to inform that based on the field performance evaluation undertaken by the Sardar Swaran Singh National Institute of Bioenergy (SSS-NIBE), Kapurthala as per the parameters (vide the O.M. of even number dated 28.01.2021), recommended by the New Biogas Projects Experts Appraisal Committee (NBPEAC) constituted by this Ministry and the PAU Dry Fermentation Design domestic biogas plant (ranging from 2 to 25 m³ biogas generation per day capacity) are approved as per given specifications & parameters in **Annexure-I** and the drawing of the same in **Annexure-II**. The approved biogas plant's designs/models shall be considered eligible for the benefits under the Biogas Programme of this Ministry.

2. The MNRE reserves the right to cancel/ modify the said approval at any time in future based on the feedback received from the end users/BIS/Technical agencies or the implementing agencies.

This issues with the approval of the Competent Authority in this Ministry.

Encl: as above.

(S R Meena)
Scientist D

E-mail: meena.sr@nic.in

To

Dr. Sarbjit Singh Sooch, Principal Scientist (Renewable Energy Engineering), Department of Renewable Energy Engineering, College of Agricultural Engineering & Technology, Punjab Agricultural University, Ludhiana – 141004 (Punjab).


Copy to:

1. The Directorate of Research, Punjab Agricultural University, Ludhiana – 141004
2. Mechanical Engineering Department, Bureau of Indian Standards, New Delhi-12
3. Heads of all Biogas Programme Implementing Agencies;
4. DG, SSS-NIBE, Kapurthala (Punjab).
5. PPS to Joint Secretary & Group Head, Bioenergy, MNRE.
6. Pls of all 8 Biogas Development and Training Centres (BDTCs) - **with request to carry out monitoring and supervision during the field inspection of small biogas plants.**
7. Director NIC MNRE – with request to upload on MNRE website.

Annexure-I*(Relates to MNRE's O.M. No. 259/7/2019-Biogas dated 31.07.2023)***Subject: Technical specification of PAU Dry Fermentation (Paddy Straw based) biogas plants**

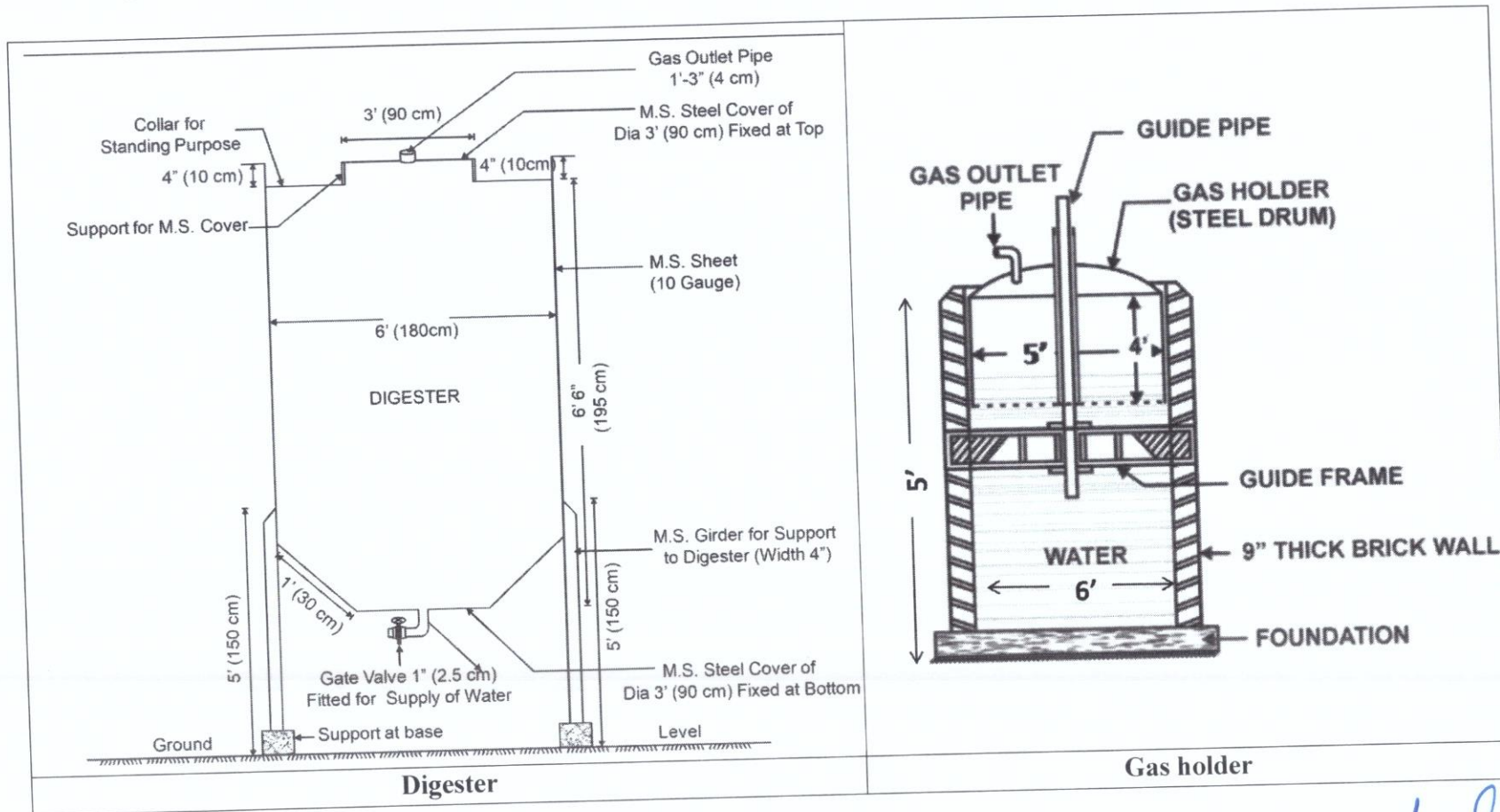
Specifications/ Parameters	Name of Original Equipment's Manufacturer
	Punjab Agricultural University, Ludhiana
(1) Biogas plant type	Batch Type
(2) Suitable main feed material for the above said biogas plant	Paddy Straw / other crop residues
(3) Biogas plant Size (biogas generation m ³ per day)	2, 4, 6, 8, 10, 15, 20, & 25
(4) Gas yield in m ³ / Ton of feed-stock	2.5 – 3 m ³ / day / Ton of paddy straw
(5) Hydraulic Retention Time (HRT)	90 – 100 days
(6) Material of construction	Mild Steel (M.S.) Sheet (with inner epoxy coating of entire digester)
(7) Tensile Strength	400 – 550 MP _a (4000 – 5500Kg/cm ²)
(8) Tear / Yield Strength (Kgs)	235 – 250 MP _a
(9) Resistance to flame and weather	All components of the biogas unit to be flame resistant / non – flammable
(10) Biogas Delivery Pressure (at burners)	The biogas delivery pressure to be maintained uniformly at 150 mm Water Column upto 80% of utilization of the generated biogas volume.
(11) Leakage	Least chances of leakage and easily repairable
(12) Accessories (Fitting and Burner)	Double Burner Stove with gas valve, Moisture trap / Remove, Lighter O & M User's Manual
(13) Piping and fittings / connections	Gas Line: HDPE with Diameter 25 mm (1") Gas pipe line with length of minimum 30 meters.
(14) Useful life of Biogas Plant	Minimum 15 years
(15) Finishing of the product	The finishing of the product (digester and gas holder) is excellent and free of all kind of defects, such that it conforms to the specifications provided in the User Manual. The User Manual should have the Do's and Don'ts and basic troubleshooting guidelines along with consumer help line number / email.
(16) Installation and commissioning of Biogas plant	Shall be done by the Manufacturer's authorized (who signed MoA with PAU) and trained personnel for the first time. The beneficiaries of biogas plants shall be provided with an "Operation and maintenance" Manual in the printed form / version along with warranty and guarantee clauses.
(17) Revision/ Modification at user's location.	To maintain the daily gas output, the developer/ authorized manufacturer shall ensure the rated gas output.
(18) The details related to the different capacity biogas plant	attached as per Annexure – I

Note: The Manufacturer of the biogas plant shall be bound to carry out any further required change(s) in these approved model of biogas plants, as and when felt necessary and asked by the Ministry (MNRE), including those required for formulating a new BIS standards for standardization of such models of biogas plants



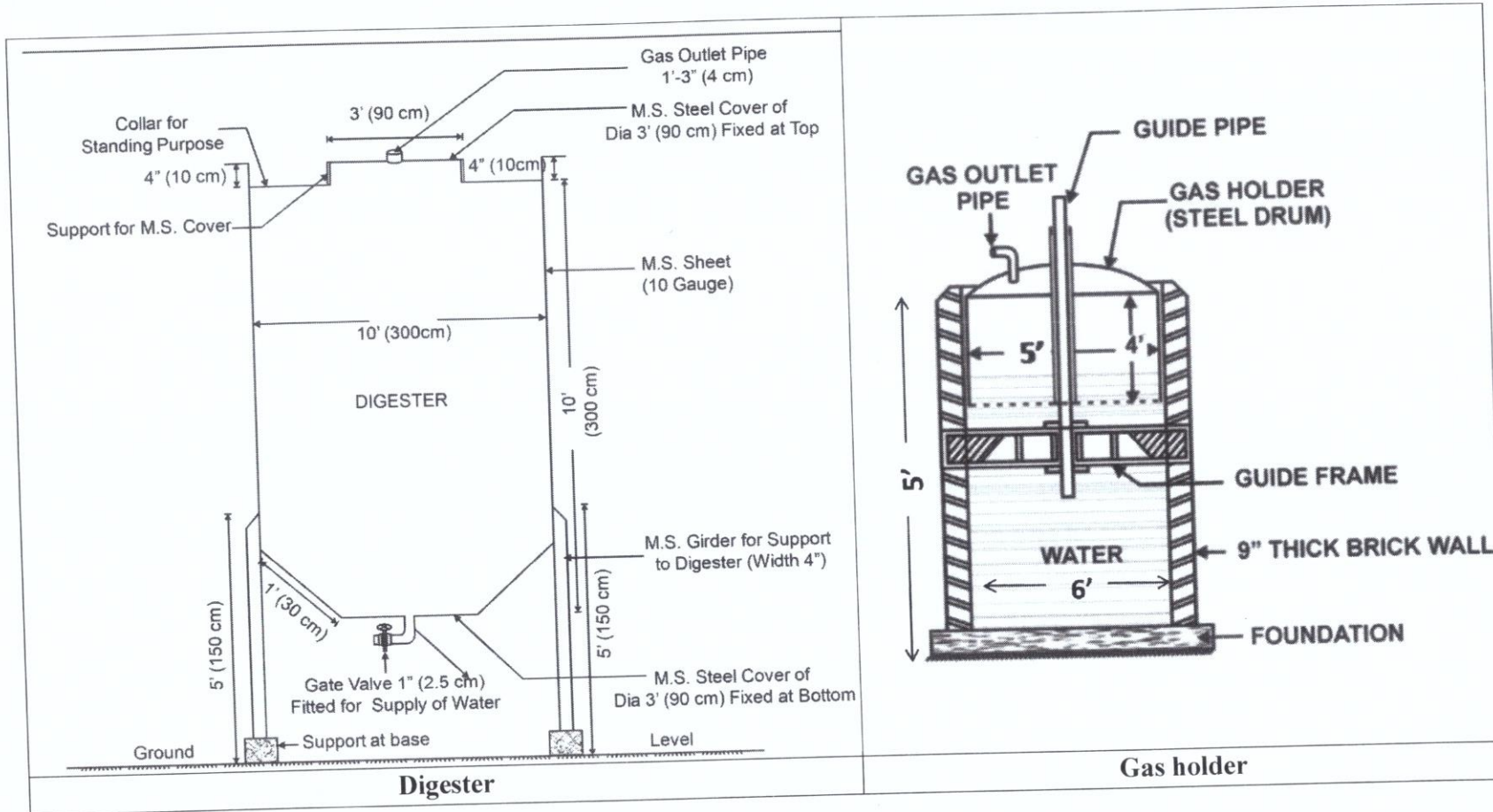
PAU Dry Fermentation (Paddy Straw based) biogas plants drawing of different capacities

1. Capacity of biogas plant – 2 m³ per day biogas generation



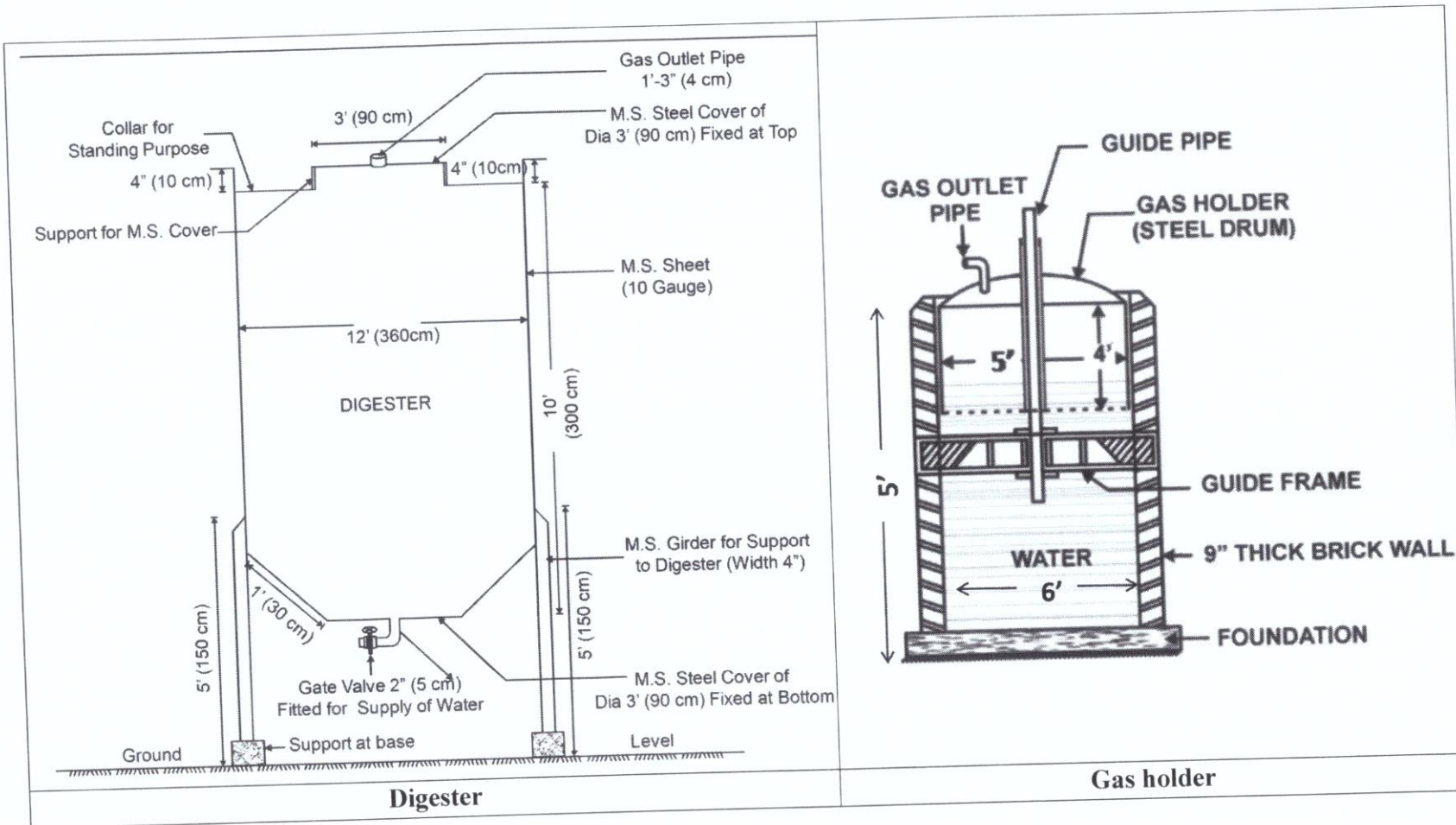
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2. Capacity of biogas plant – 4 m³ per day biogas generation

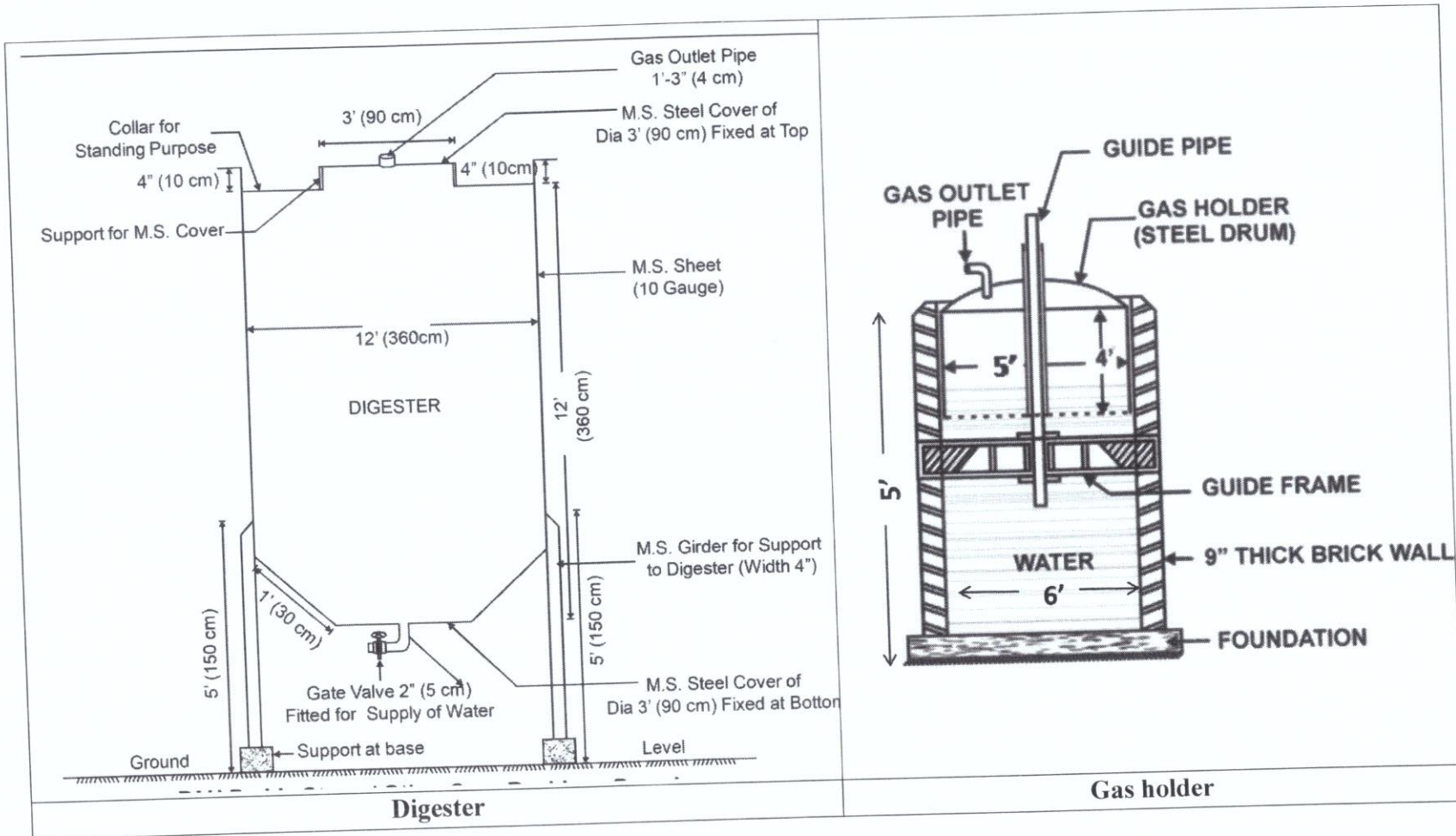


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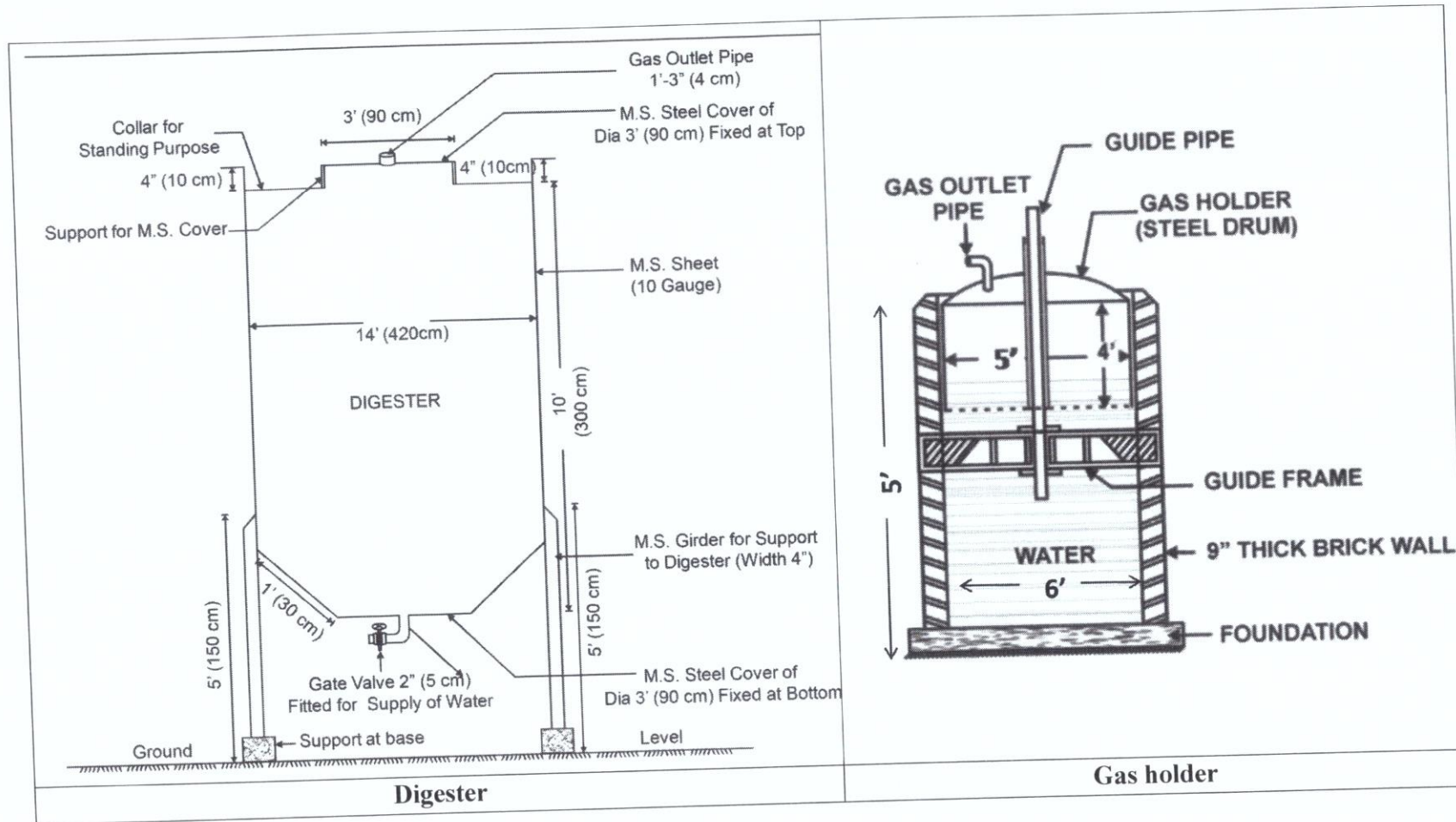
3. Capacity of biogas plant – 6 m³ per day biogas generation



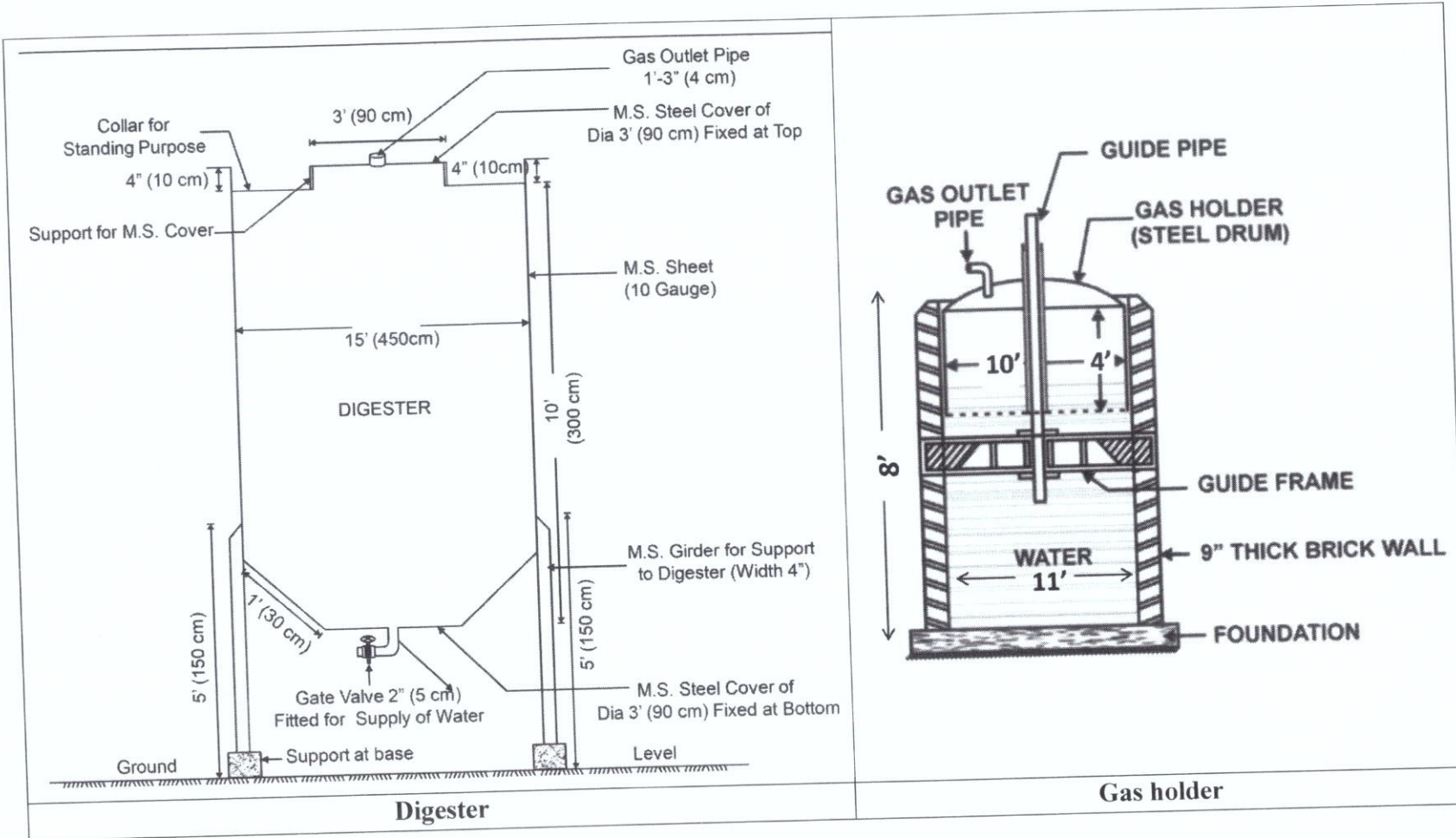
4. Capacity of biogas plant – 8 m³ per day biogas generation



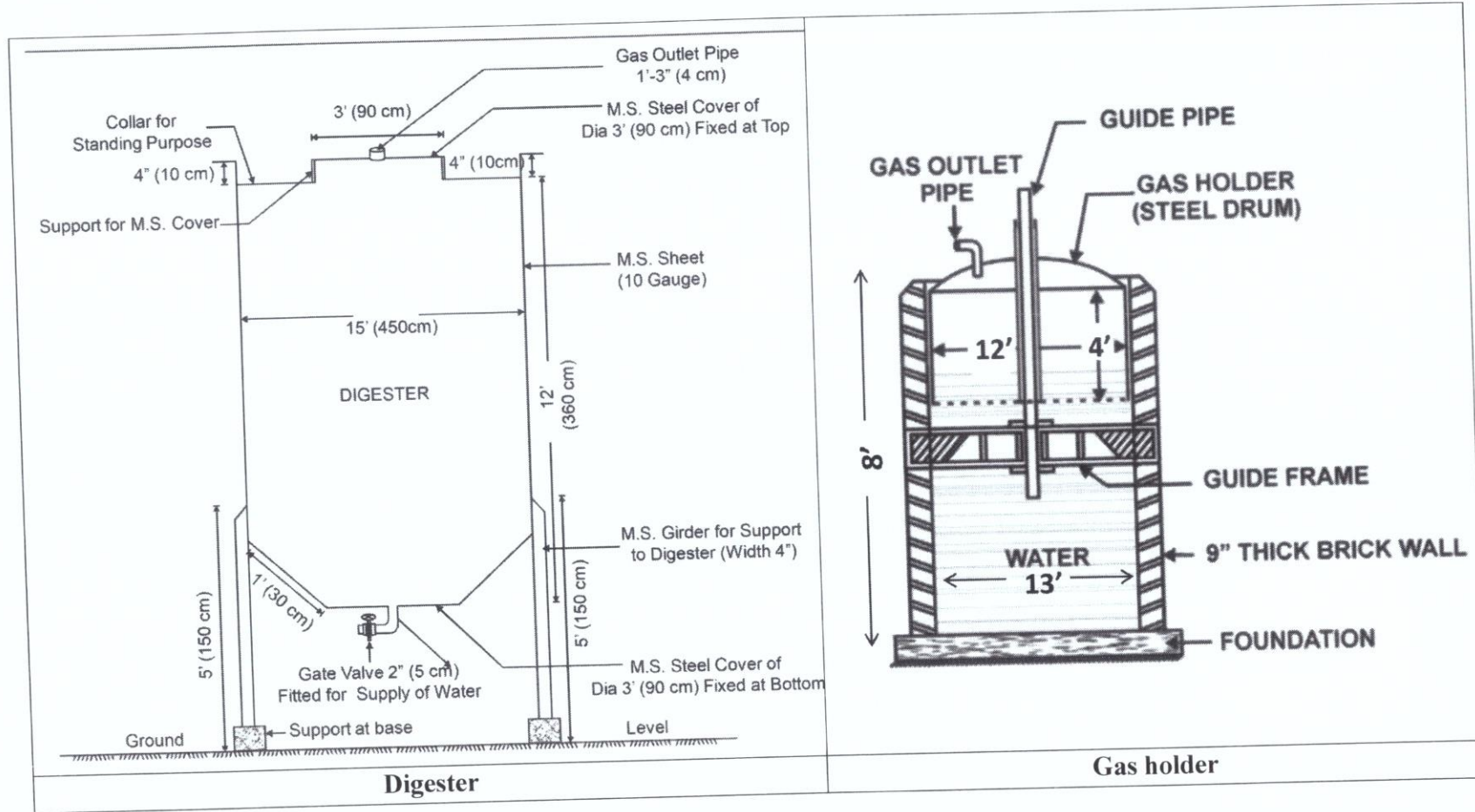
5. Capacity of biogas plant – 10 m³ per day biogas generation



6. Capacity of biogas plant – 15 m³ per day biogas generation



7. Capacity of biogas plant – 20 m³ per day biogas generation



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8. Capacity of biogas plant – 25 m³ per day biogas generation

