

1. Water Level Recorder (Bubbler type or Radar type) :-

- Bubble Type Water Level Recorder is used to measure water level of river. It works on principle in which air is pumped by means of air probe dipped in water, the data is read when bubbling starts and is converted to equivalent water head and automatically records data in attached Data Logger and transfer data to modeling center. A Solar Panel is attached to charge the batteries for Unattended Continuous logging.

Area requirement : Approx. 2m X 2m (6.5 ft X 6.5 ft)

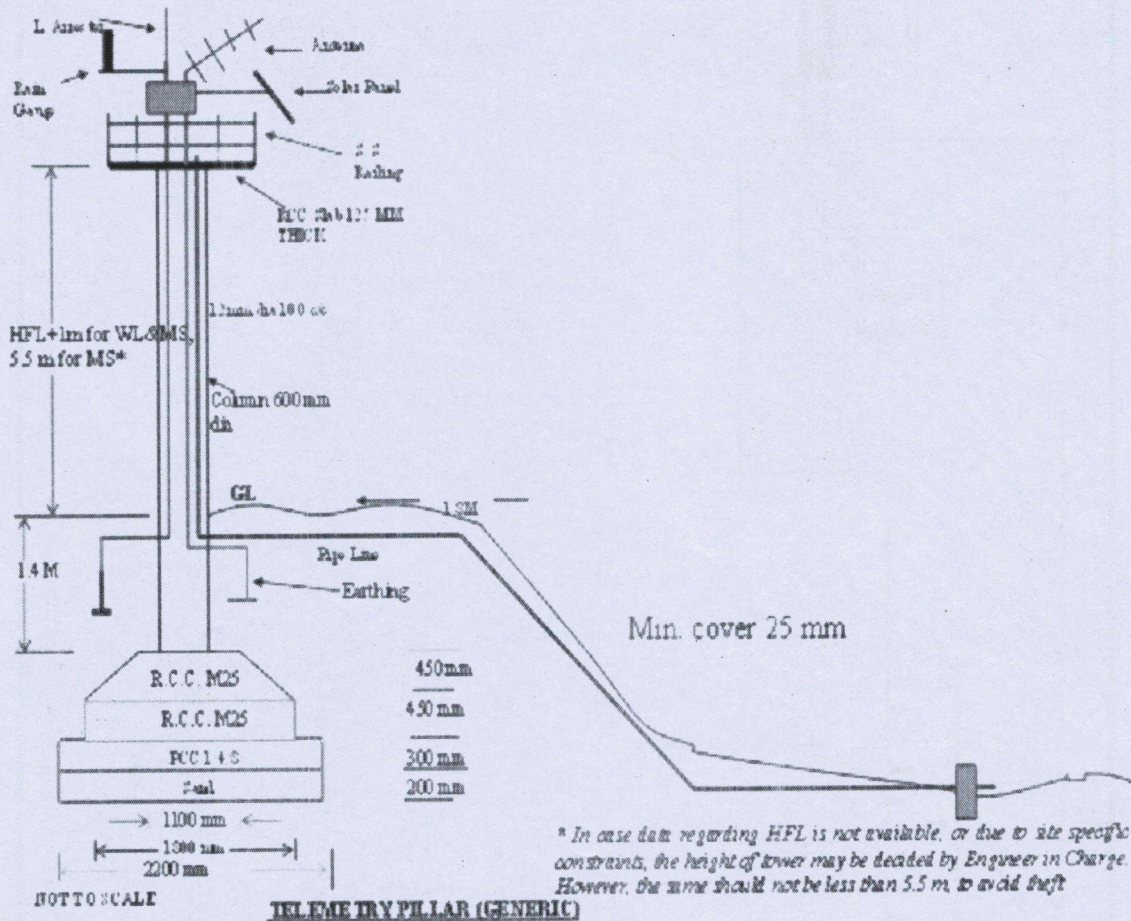


Figure 1 :- Structural details of Bubbler Type Water Level Recorder

- Radar level measurement is used to measure water level of river. It based on the principle of measuring the time required for the microwave pulse and its reflected echo to make a complete return trip between the non-contacting transducer and the senses water level. Then, the transceiver converts this signal electrically into level and presents it as an analogue and/or digital signal. It automatically records data in the attached Data Logger and transfer data to modeling center at Gangtok. A solar panel is used to charge the batteries for Unattended Continuous logging.

Area requirement : None

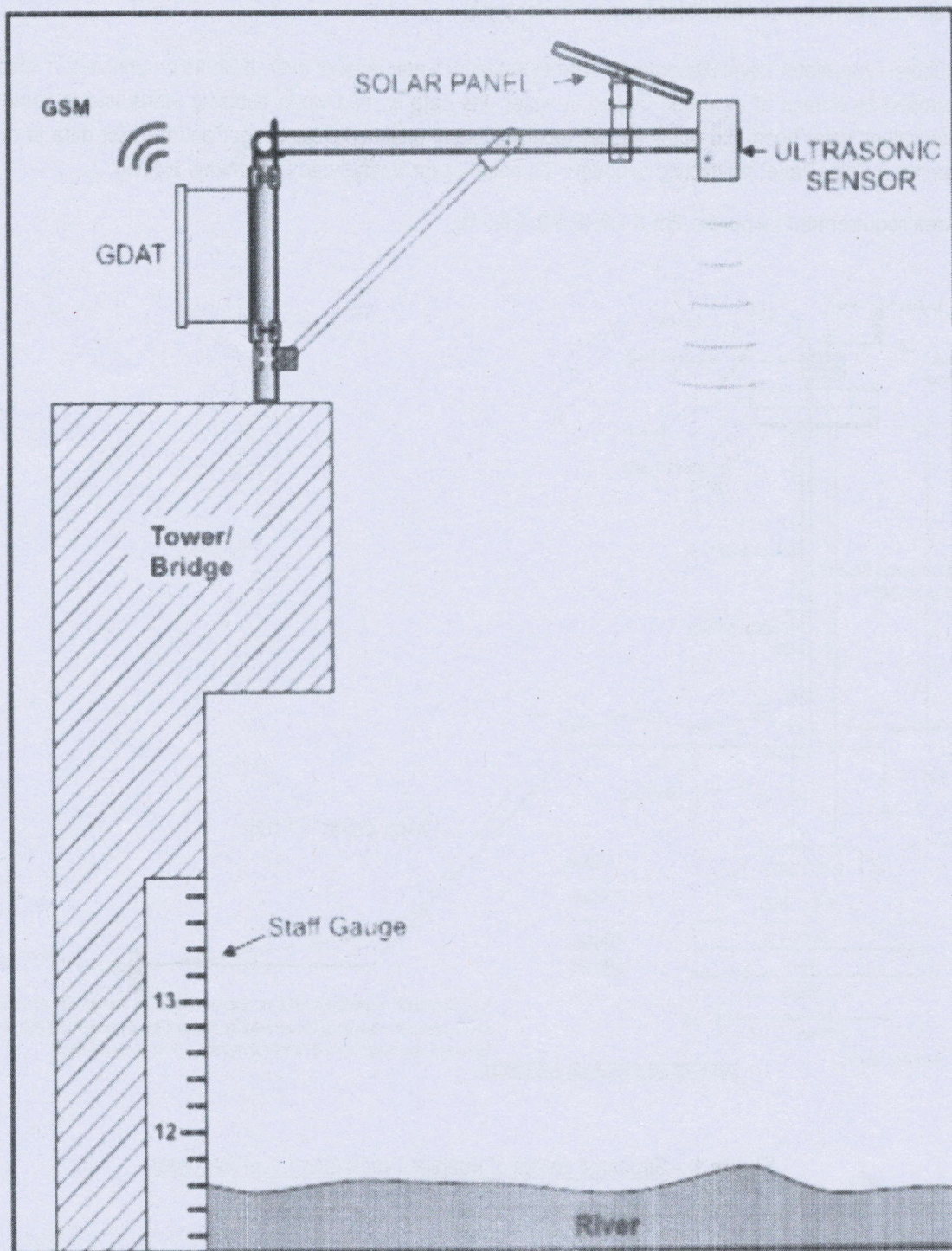


Figure 2:- Radar Type Water Level Recorder

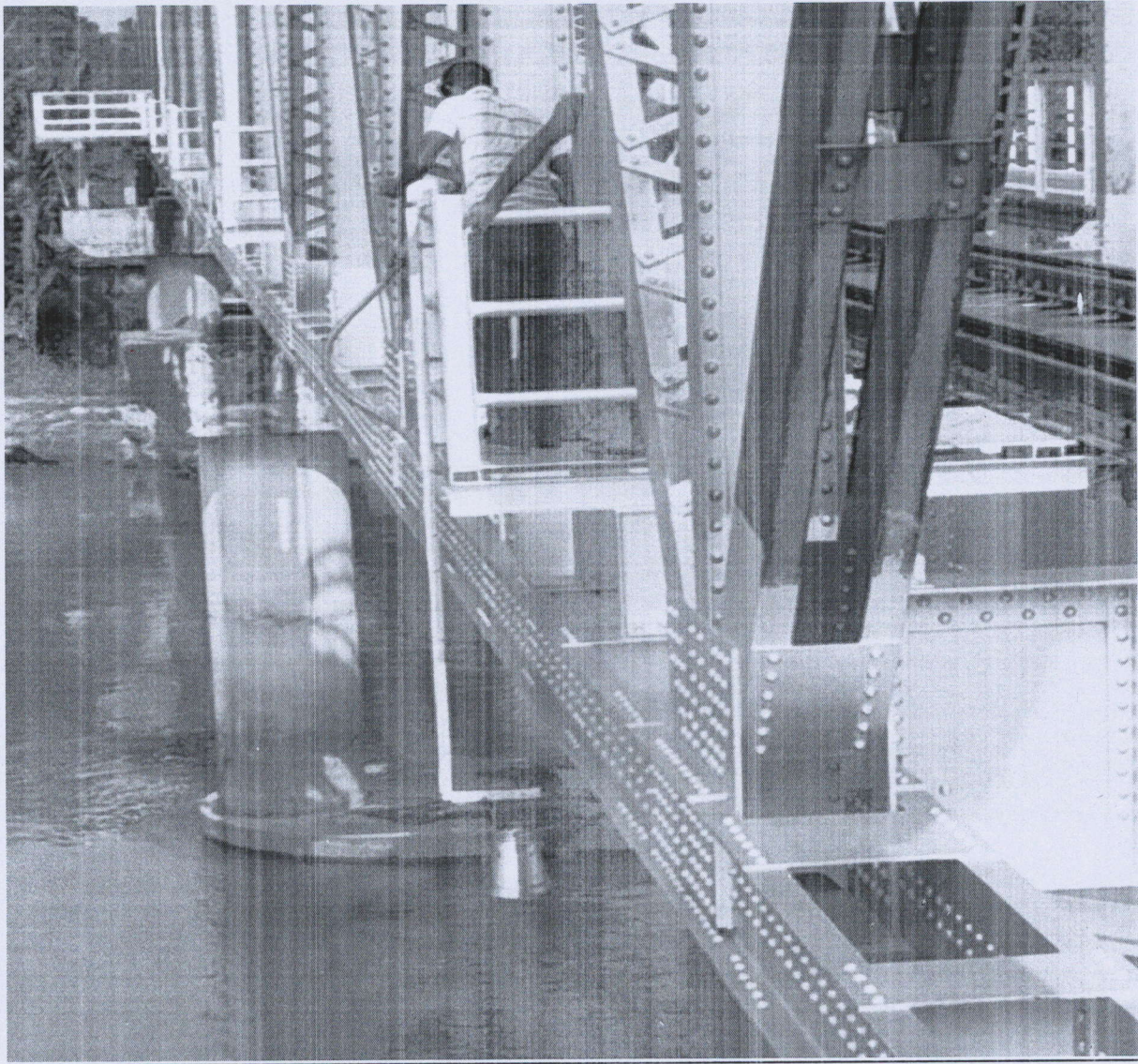
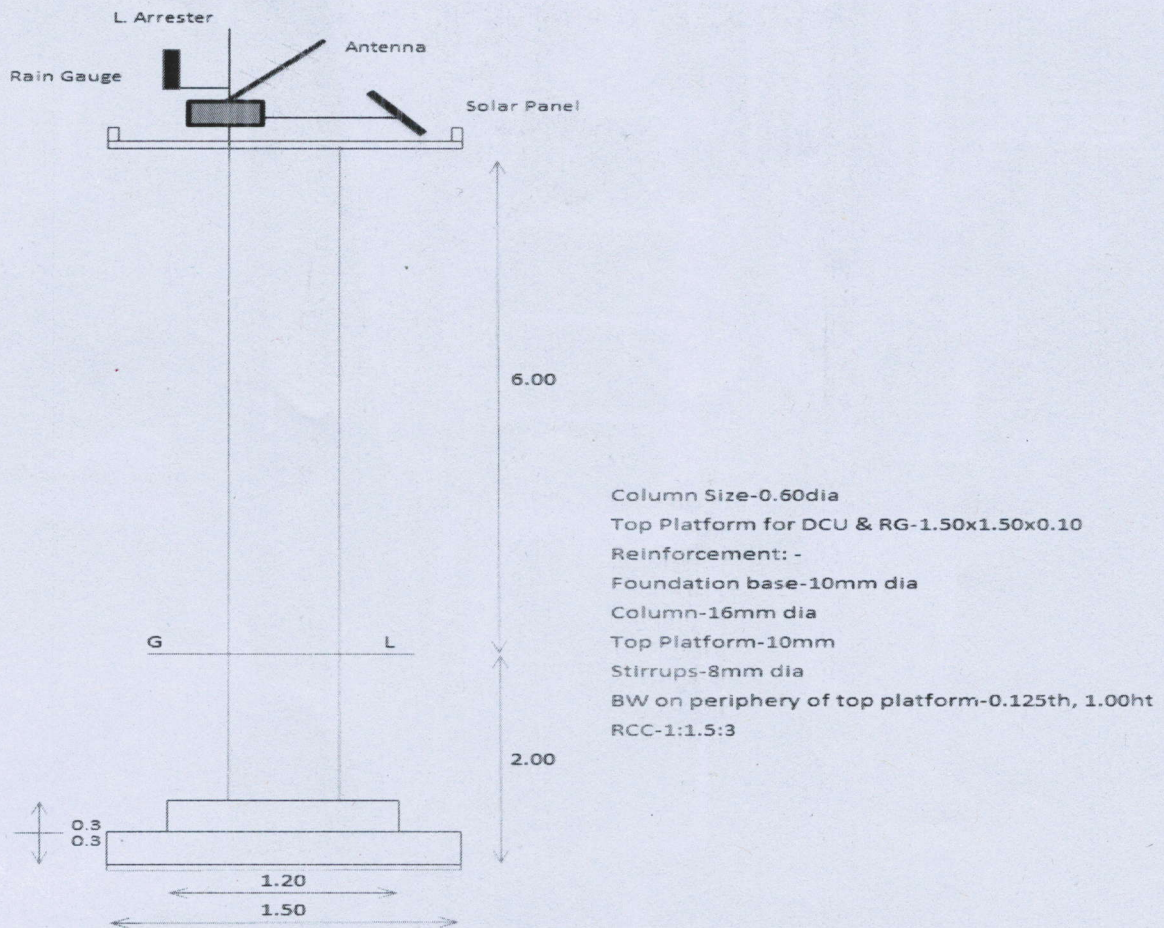


Figure 3:- Radar Type Water Level Recorder

2. Metrological Station (Rainfall) : -

Government of India has wide plan to install Metrological Station network throughout the country. It measures the rainfall in particular catchment that helps to real time monitoring in flood forecasting and also utilization of water for various purpose like irrigation, drinking, land sliding etc. It records hourly rainfall data and directly transfers to modeling center Gangtok. Each station covers 2 m X 2 m land in which a instruments setup on the top of a column of size 0.6 m dia. Since Digital rainfall recorder is contained fully automatic data recorder fitted with solar panel and SLA battery-based power system, so there is no requirement of any skilled man power as well as any external source of electricity.

Area requirement: approximately 2m X 2m (6.5 ft X 6.5 ft)



RCC tower for installation of Telemetry DCU and RG

Figure 4:- Structural details of Metrological Station



Figure 5:- Metrological (Rainfall) Station

3. Snow Gauge Station:-

A snow gauge is a type of instrument used by meteorologists and hydrologists to gather and measure the amount of solid precipitation (as opposed to liquid precipitation that is measured by a rain gauge) over a set period of time. The snow gauge consists of two parts, a copper catchment container and the funnel shaped gauge itself. The actual gauge is mounted on a pipe outdoors and is approximately 1.5 m (4 ft 11 in) high, while the container is 51.5 cm (4 ft 2.25 in) long. Remote station shall be equipped with all necessary equipment to measure Snow precipitation / rainfall, snow depth, snow density/snow water equivalent and Meteorological parameters consisting of Temperature, Humidity, Evaporation, sunshine and Wind Instruments (AWS), including tubing as well as all Peripherals including the following:

- Data Collection Unit (DCU) mounted inside an enclosure
- Mast (tripod) to mount DCU and solar panel & INSAT antenna at the site (alternatively, where walled enclosures available, the same can be mounted on the wall).
- Civil works for mast and Snow gauge
- Wire-mesh fencing and gate with lock
- Mounting stand for Snow gauge will be mounted at WMO Specification 0.8 to 1m above ground.

Area requirement: approximately 4m X 4m (13ft X 13ft)

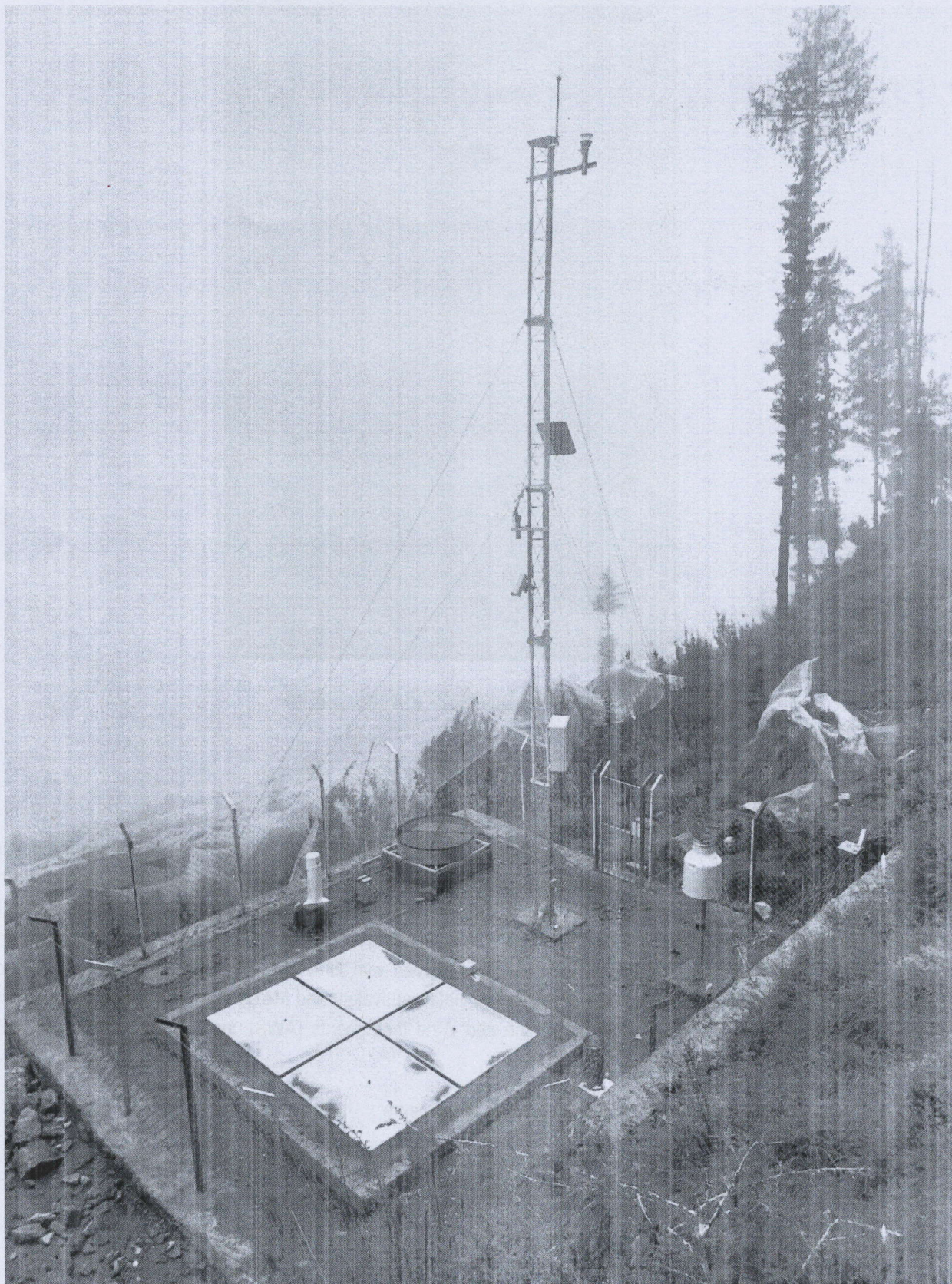


Figure 6:- Snow Gauge Station at CWC site



Figure 7:- Snow Gauge Station at CWC site

Estimate: Letter of Intent given to the firm enclosed

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