Irrigation Engineering

A **canal fall** (also called a **canal drop**) is a **structure built in an irrigation canal** where there is a **sudden drop in ground level or elevation**. Its main purpose is to **manage the excess energy** of flowing water caused by the change in elevation.

**🔧 Purpose of a Canal Fall**

1. **To dissipate energy** from falling water.
2. **To prevent erosion** of the canal bed downstream.
3. **To maintain the designed flow velocity** and protect the canal structure.
4. Sometimes used to **measure water discharge** (when combined with measuring devices).

**🛠️ Types of Canal Falls**

1. **Vertical Drop Fall (Sharda Fall)**
   * Simple structure, water drops vertically.
   * Used for moderate discharges and small drops.
   * Suitable upto 15 cumecs water
2. **Glacis Fall (Sloped type)**
   * Sloped surface to reduce velocity gradually.
   * Safer for large volumes of water. Suitable upto 60 cumecs and drop 1.5 m
3. **Step Fall**
   * Drop is divided into multiple small steps.
   * Common in hilly terrain.
4. **Notched Fall**
   * Water flows through notches cut in the structure.
   * Helps in controlling small flows precisely.
5. **Ogee Fall**
   * Curved surface (like an ‘S’) used to match the natural flow path.
   * More hydraulic efficiency.