Project Design Phase
Proposed Solution Template

Date	18 February 2026
Team ID	LTVIP2026TMIDS76735
Project Name	Advancing Nutrition Science Through Gemini AI
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1	**Problem Statement**	Manual construction site auditing and material counting (like rebar or bricks) are slow, labor-intensive, and prone to human error, leading to project delays and inaccurate inventory logs.
2	**Idea / Solution Description**	An AI-powered web dashboard that allows engineers to upload site images. Using the **Google Gemini 2.5 Flash API**, the system performs "Visual Reasoning" to automatically identify structural members, count materials, and generate technical audit reports.
3	**Novelty / Uniqueness**	Unlike standard digital logbooks, this solution uses **Multimodal LLMs** to "see" and interpret complex construction skeletons, providing technical insights and inventory data from a single photo without specialized hardware.
4	**Social Impact / Customer Satisfaction**	Increases site safety by ensuring structural members match design specs and significantly reduces the 4-5 hours typically spent on manual counting, leading to higher engineer job satisfaction and faster project completion.
5	**Business Model**	A **SaaS (Software as a Service)** model with tiered subscription levels for construction firms based on the number of site projects or active monthly users.
6	**Scalability of the Solution**	The cloud-based architecture (using **Streamlit** and **GCP**) allows the tool to support multiple concurrent site audits globally. Its decoupled design ensures that as more users join, the heavy AI processing is handled independently by the API.