

## **AutoCAD Design – Plant Layout Optimization**

**Tools:** AutoCAD, P&ID; Standards

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**Overview:** Designed optimized plant layout and piping diagram for efficient workflow and space utilization.

### **Objectives**

- Create accurate mechanical drawings and P&ID; diagrams.
- Improve equipment placement for accessibility and safety.

### **Technical Approach**

- Used AutoCAD layers to separate mechanical, electrical, and piping systems.
- Applied standard symbols for valves, sensors, and actuators.
- Conducted layout analysis for pipe runs and maintenance access.

### **Challenges & Solutions**

**Challenge:** Overlapping routes

**Solution:** Adjusted elevation and rerouted pipelines.

### **Results**

Reduced material usage by 12% and improved operational accessibility.

### **Future Enhancements**

Integrate 3D modeling for visualization and collision detection.