

Task Brief – Automated Numbered Marking & Description Extraction from Engineering Drawings

1. Objective

Develop a system that can automatically process engineering drawing PDFs, visually mark important text elements with numbered circles, and generate a corresponding output list where each number maps to the description of the marked text.

2. Input

- Engineering drawing in PDF format
- The drawing will be fed directly into the system
- A Google Drive link may be shared only for reference or examples

Drawings may contain:

- Dimensions
- Notes
- Tolerances / GD&T
- View labels (Top View, Section View, Auxiliary View, etc.)
- Feature descriptions
- Datum identifiers (e.g., X1, Z1)

Reference link of input image :

<https://drive.google.com/file/d/1q6PFy1BMgy2uB6Go4L8RIJLQ3hthlhHO/view?usp=sharing>

3. Core System Requirements

3.1 Visual Marking on Drawing

- Detect text elements present in the drawing PDF
- Identify relevant text based on configurable rules
- Draw a circle around the selected text
- Assign a unique number to each circle

Numbering Rules:

- Sequential numbering (1, 2, 3, ...)
- Each number must be unique within a drawing
- The same number must be reflected in the output

Annotation Rules:

- Circles must fully enclose the text
- Circles and numbers must be clearly visible
- Original drawing content must remain unchanged; markings must be overlaid

3.2 Number-to-Description Mapping (Output)

For every numbered circle, the system must generate a corresponding output entry containing:

- Circle Number
- Description (exact text extracted from the drawing)

Example (for illustration only):

- 1 – Dimension 18 × 45 TYP
- 2 – Dimension 3.5
- 3 – Dimension 1.5
- 4 – Auxiliary View P
- 5 – Dimension 11
- 6 – 7.5 MIN WALL THICKNESS
- 7 – Flatness 0.2

Any table or format shown earlier is only for reference. The system is not constrained to a fixed column layout.

4. Critical Exclusion Rule – Datum Identifiers

4.1 What Must NOT Be Marked

- Datum identifiers such as X1, Z1
- Similar labels shown in black circles in the drawing
- Any datum-related symbols or references

These elements are part of the original drawing notation and must remain untouched.

4.2 Expected Behavior

- Detect datum identifiers
- Explicitly exclude them from:
 - Circular marking
 - Numbering
 - Output description mapping

Visual intent:

- Black circled datums (X1, Z1, etc.) → Do NOT mark
- Dimensions, notes, tolerances, and feature descriptions → Mark and number

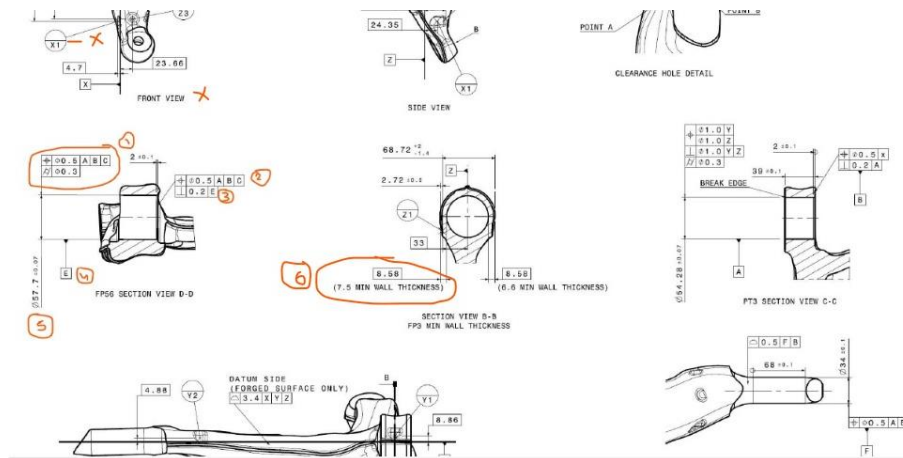
5. Output

1. Annotated Drawing:

- PDF containing numbered circles around selected text

2. Structured Output File:

- Table / Excel / CSV / JSON



ITEM - Technical Review	
[Note:1] Copy of marked drawing to be attached 2] Use additional	
Vendor Code	B03380
Part No. / Mod	548232453802_31/05/2024_Rev d
S.No.	Parameters Critical to fitment & Function (aesthetics, if applicable)
Y	Details Y
1	Dimension 1X 45° TYP
2	Dimension 3.5
3	Dimension 1.5
P	Auxiliary View P
4	Dimension 11
5	Dimension 3
6	R13
7	Flatness 0.2
Top View	Top View 1
8	Dimension 108.7
9	Eds Bracket 2
10	DIRT Shield 1
11	Eds Bracket 1