



**Client Background:**  
Aerospace company founded in 1997 located in New Haven, Indiana.

**Client Background:**

Provider of tailored kitting solutions and wire harnessing services to industries and government.

Recently expanded into a new business of manufacturing electrical wire harnesses.

Current production line is 301 kits annually.

**Problem Statement:**

- Client unable to meet rising demand for electrical wire harnesses and kitting solutions.
- Primary constraint: Limited floor space in manufacturing bays.
- Client cannot expand beyond current perimeter.
- Requires 5k to 10k additional working space for B Bay.

**Methodology:**

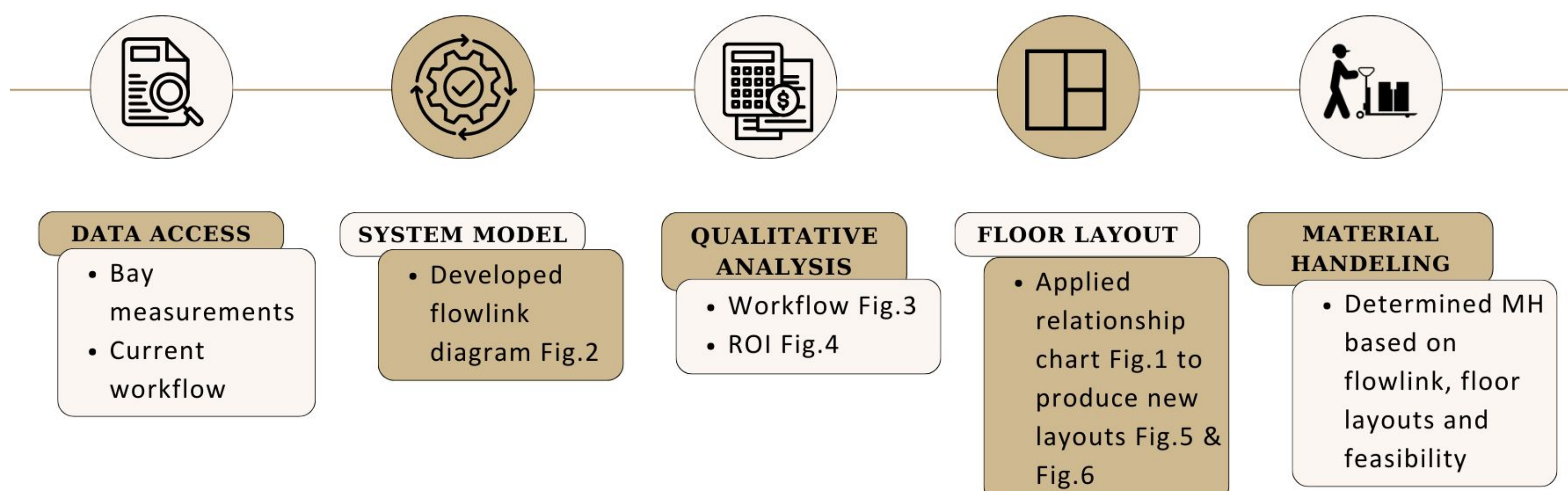


Fig.1: CORELAP Relationship Chart between processes for kitting and wire harnessing

From To Chart	Picking	Packing	Inventory	Quality Assurance	Wire Harness Process	Wire Cutting Process	Shipping	TCR	Placement Sequence
Picking (JIT)	0	2	2	0	0	2	0	6	1
Packing		0	0	2	0	0	0	2	3
Inventory (Warehouse)			0	0	0	1	2	3	2
Quality Assurance				0	1	1	2	4	4
Wire Harness Process					0	2	0	2	6
Wire Cutting Process						0	0	0	7
Shipping							0	0	5

**Current State System Model:**

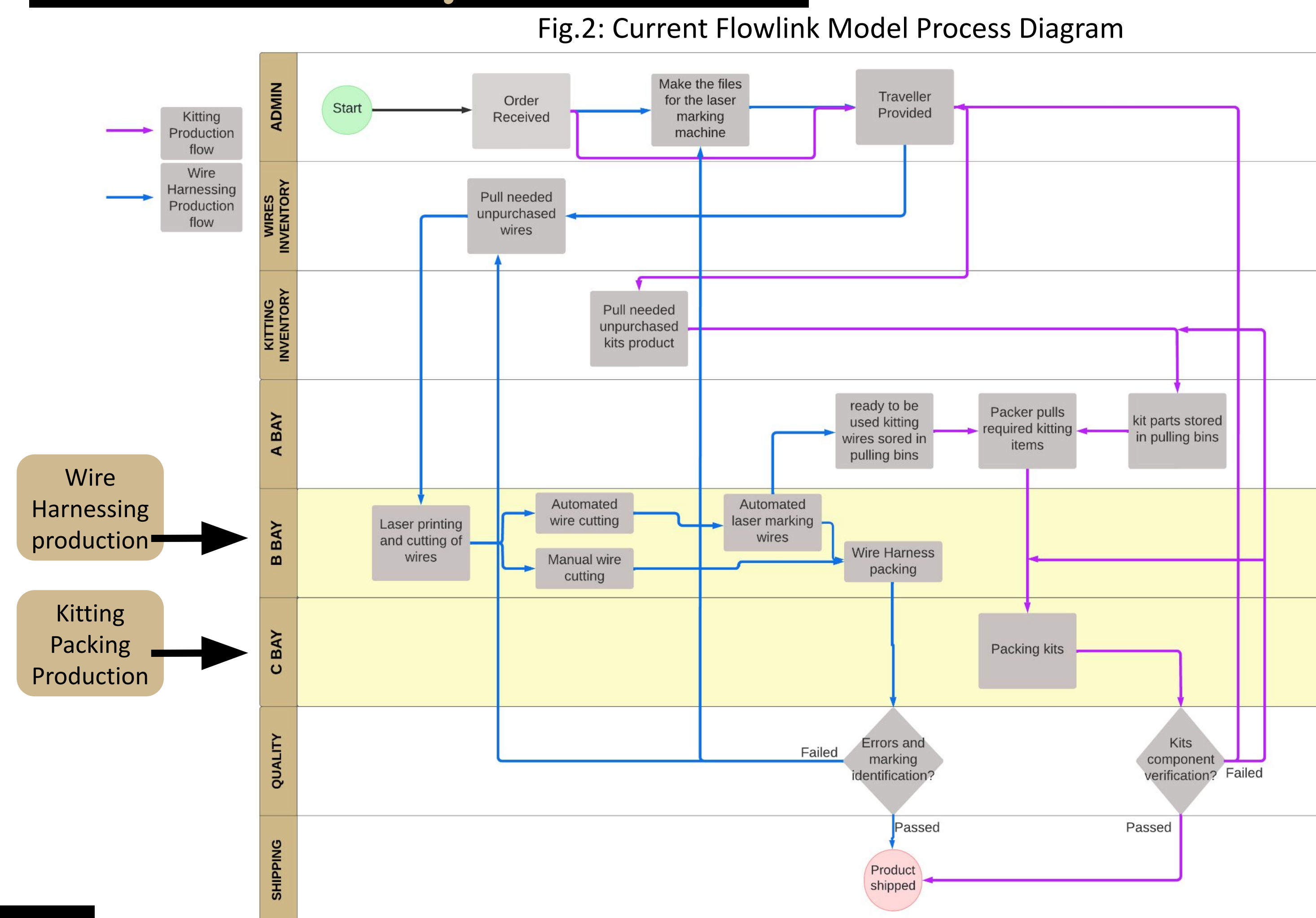
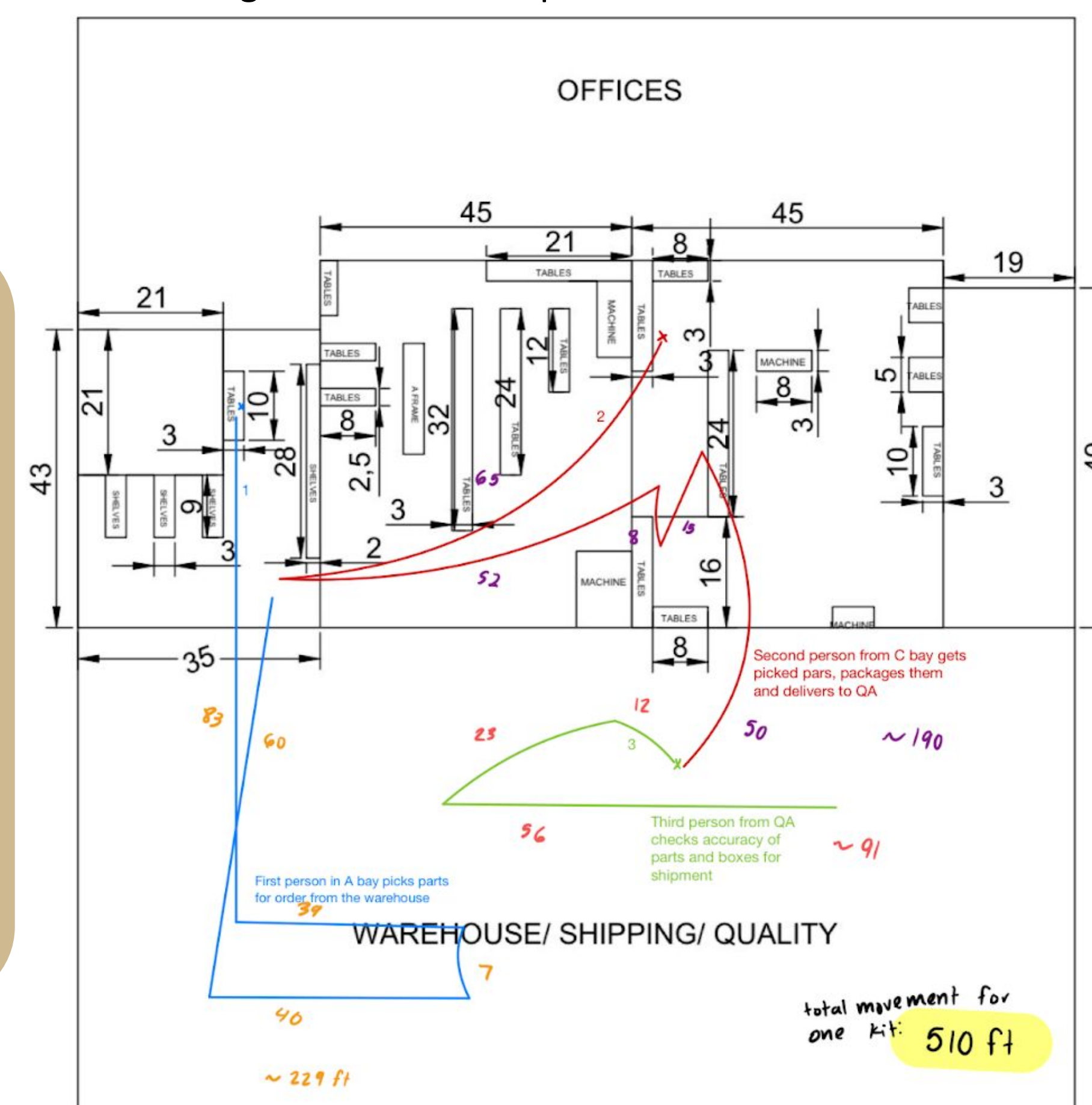


Fig.2: Current Flowlink Model Process Diagram

Fig.3: Current floor plan with workflow

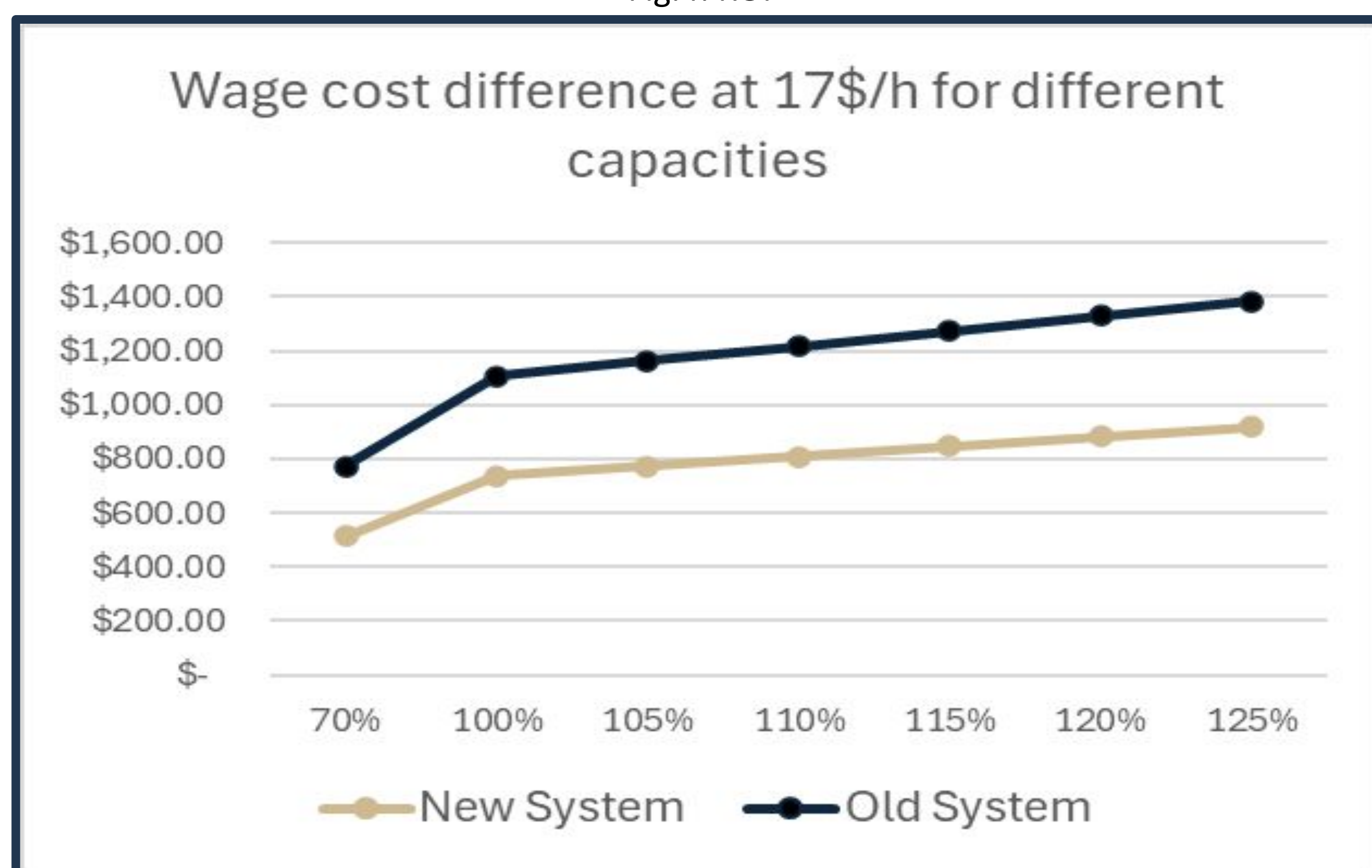


**Analysis:**

- Bay B is running one month ahead of Bay C.
- Congestion on Bay A inventory with wire harnessing.
- Lag in Bay C production.

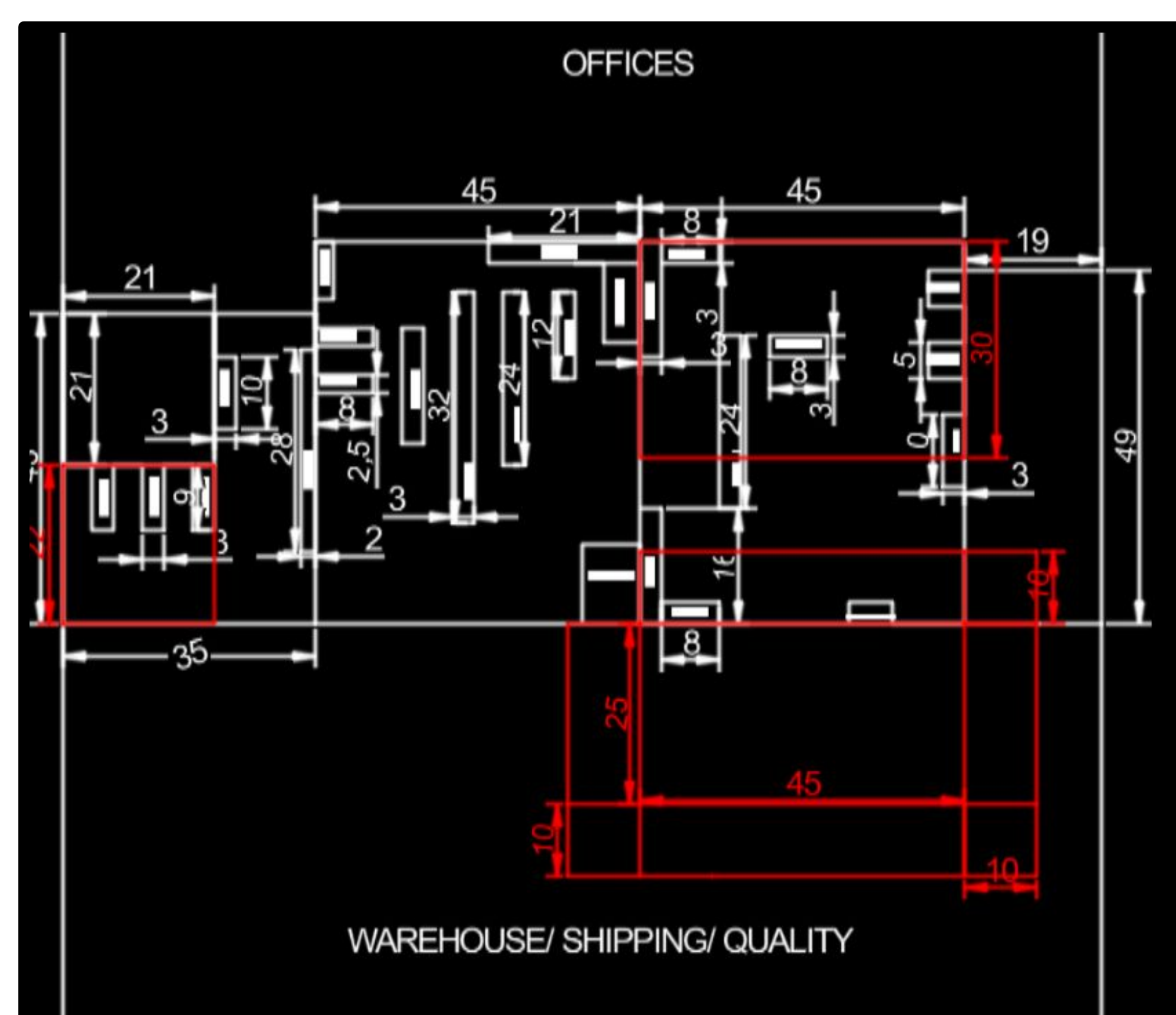
**Discussion and Analysis:**

Fig.4: ROI



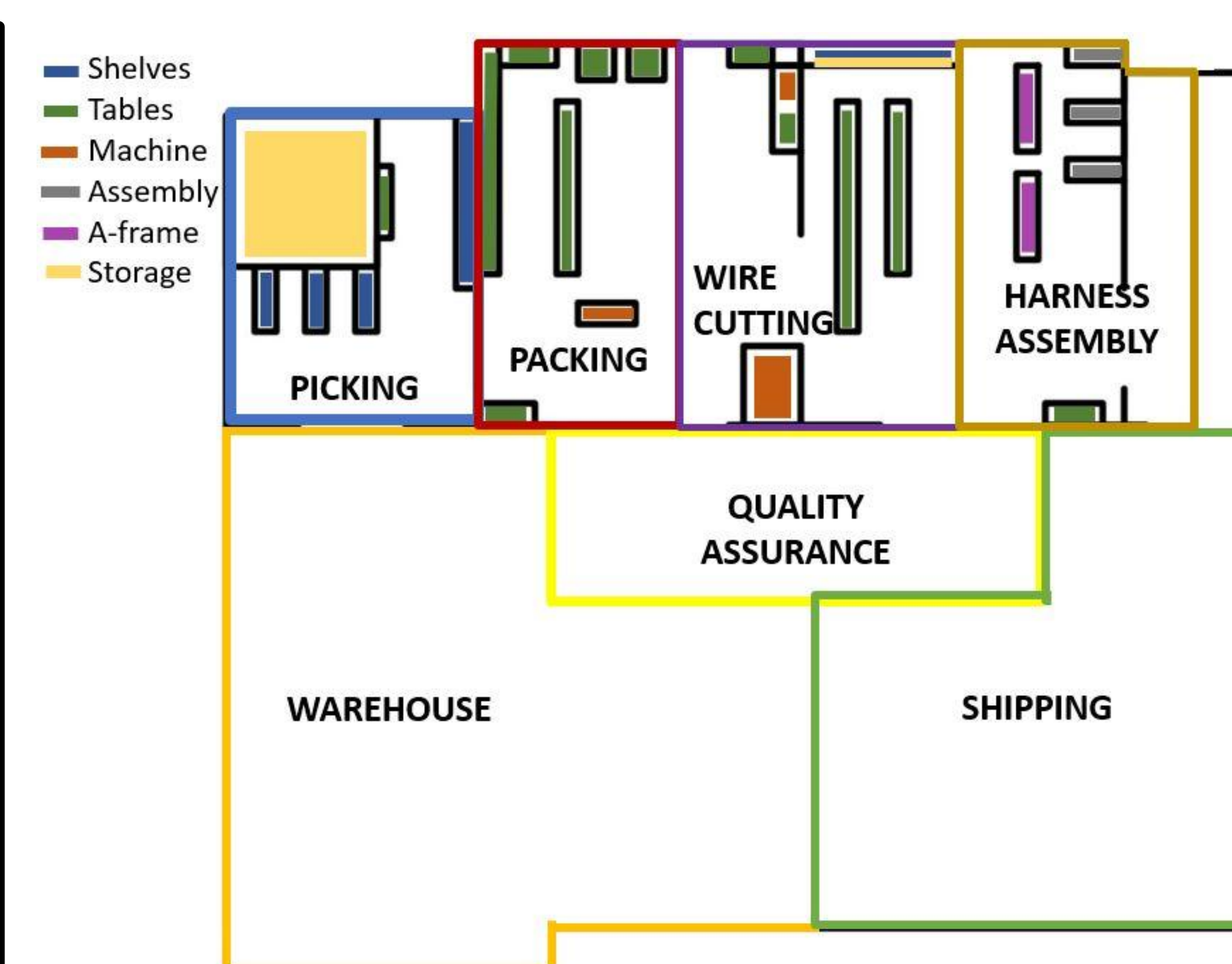
**Results:**

Fig.5: New Suggested Additional Space Layouts



A proposed upper level outlined in red to accommodate for the wanted 5,000 additional square feet of working space.

Fig.6: New Suggested Reorganized Layouts



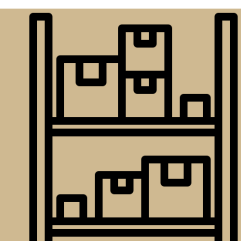
A reorganized main floor to increase efficiency with material flow and ultimately getting shipments out the door quicker to increase throughput.

**Impacts:**

- Eliminate redundant movements by relay of product flow. **By 33.5%**
- Usage of MH to accelerate product flow completion time and reduce picking and matching human errors.
- Suggested the addition 5000 sq. ft. of Mezzanine area to increase production capacity when needed. **By 42.3% per year**

**Material Handling Recommendations:**

Shelving to hold wire spools and cut out wires.



Barcode system to automate verification and tracking of items

