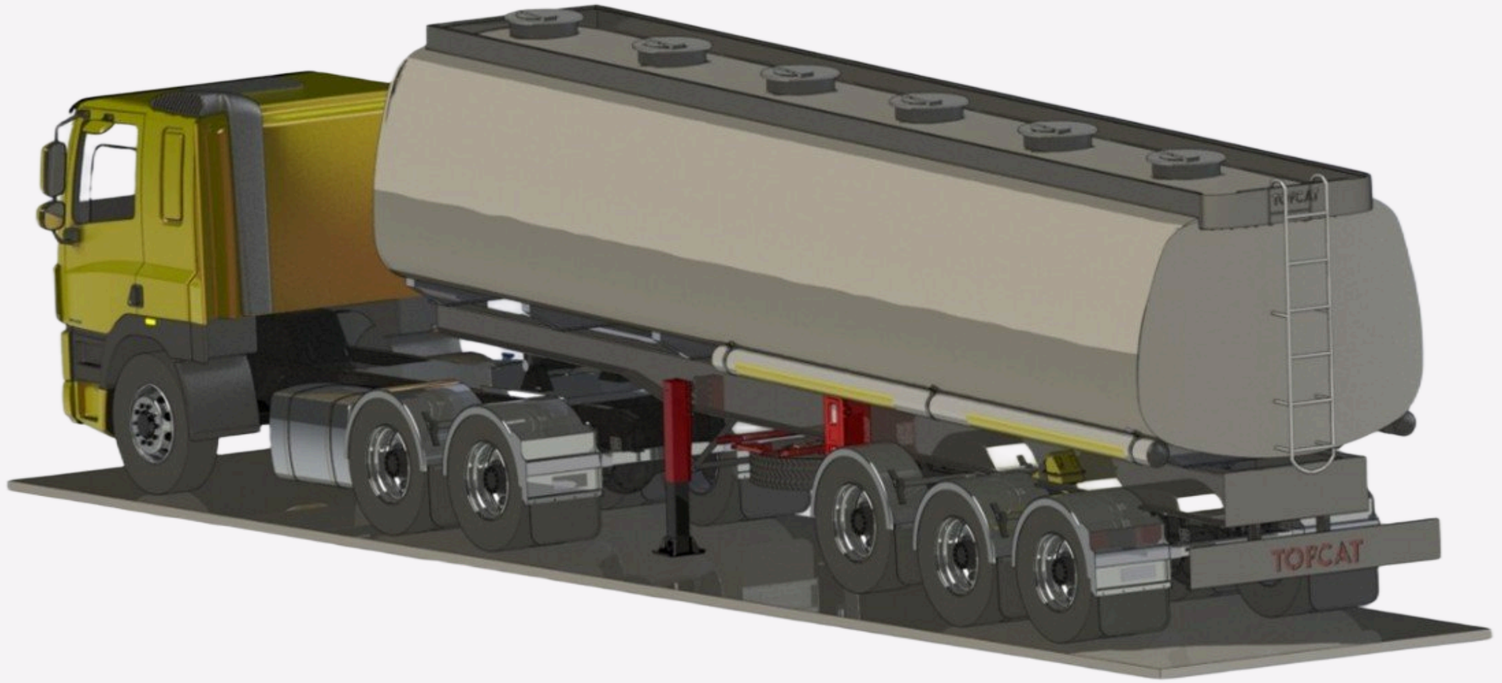
Mohamad Youness,
Mechanical Design Engineer

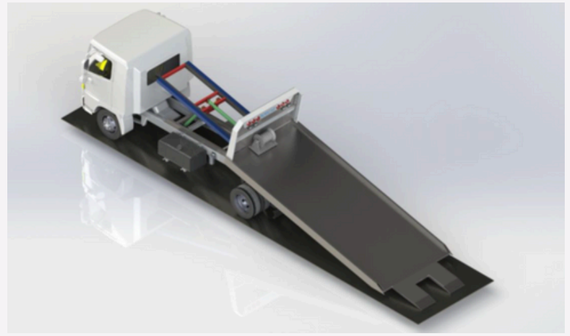
2025

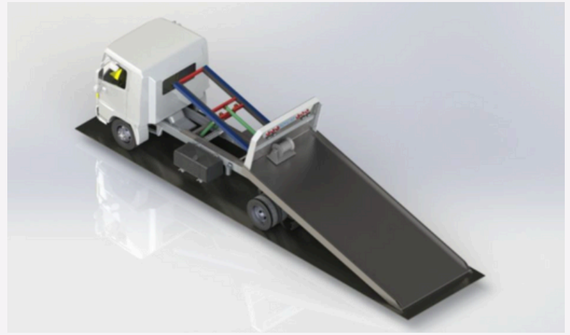


Portfolio

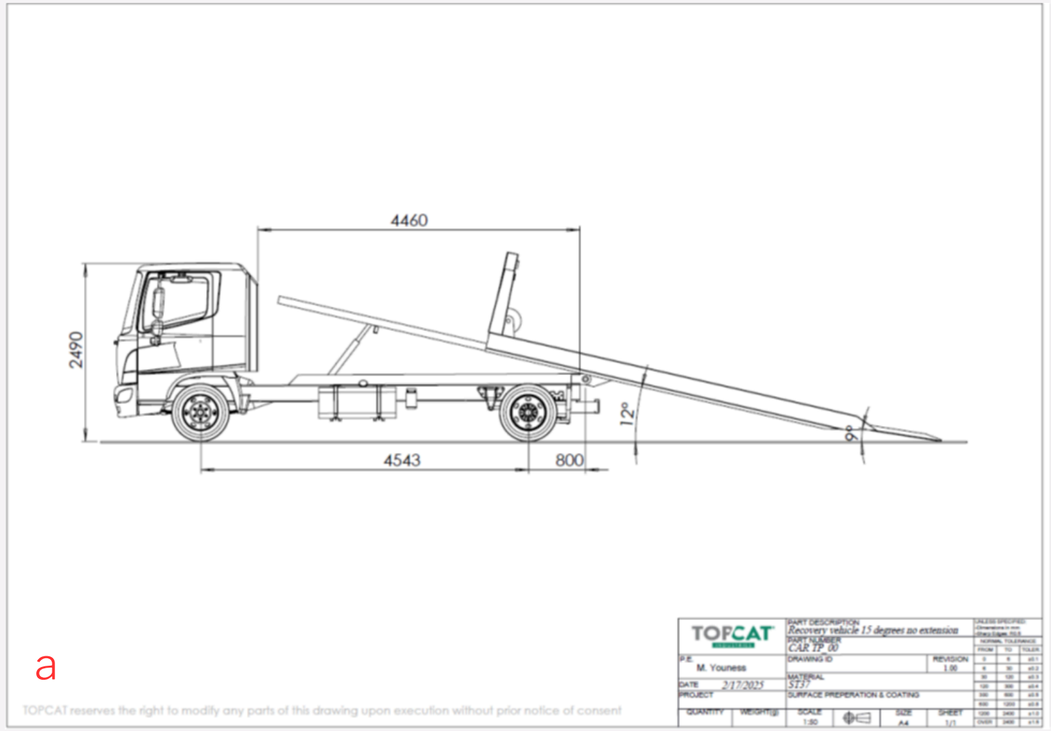
1- Tow Platform Designs

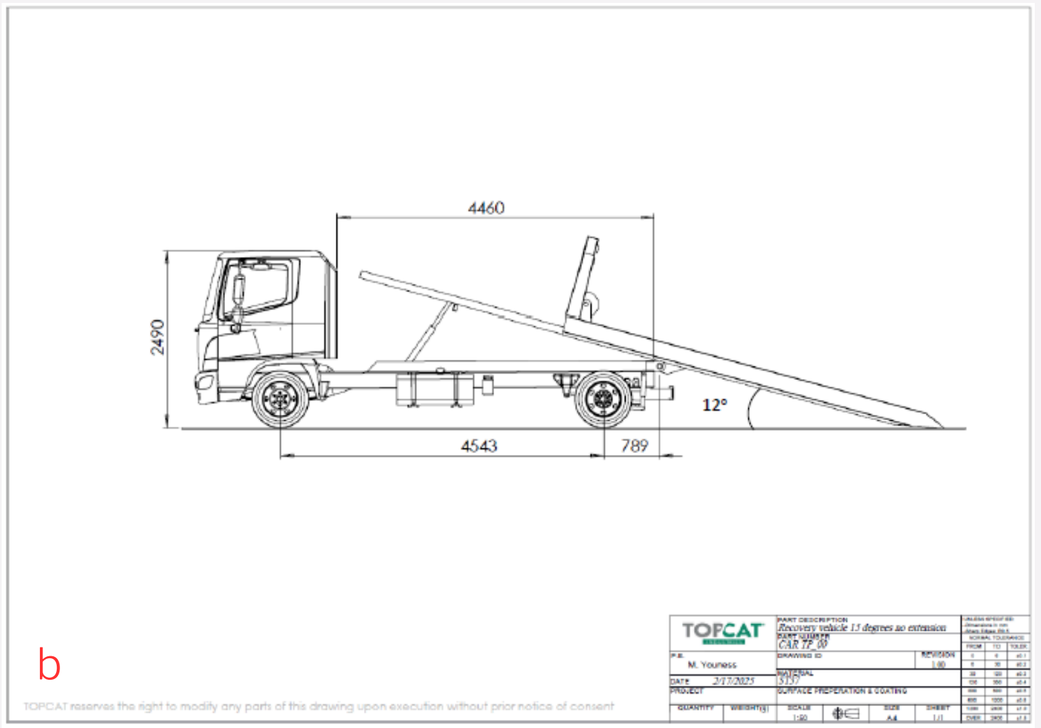
software used: Solidworks23, AutoCAD





1- Tow Platform Designs



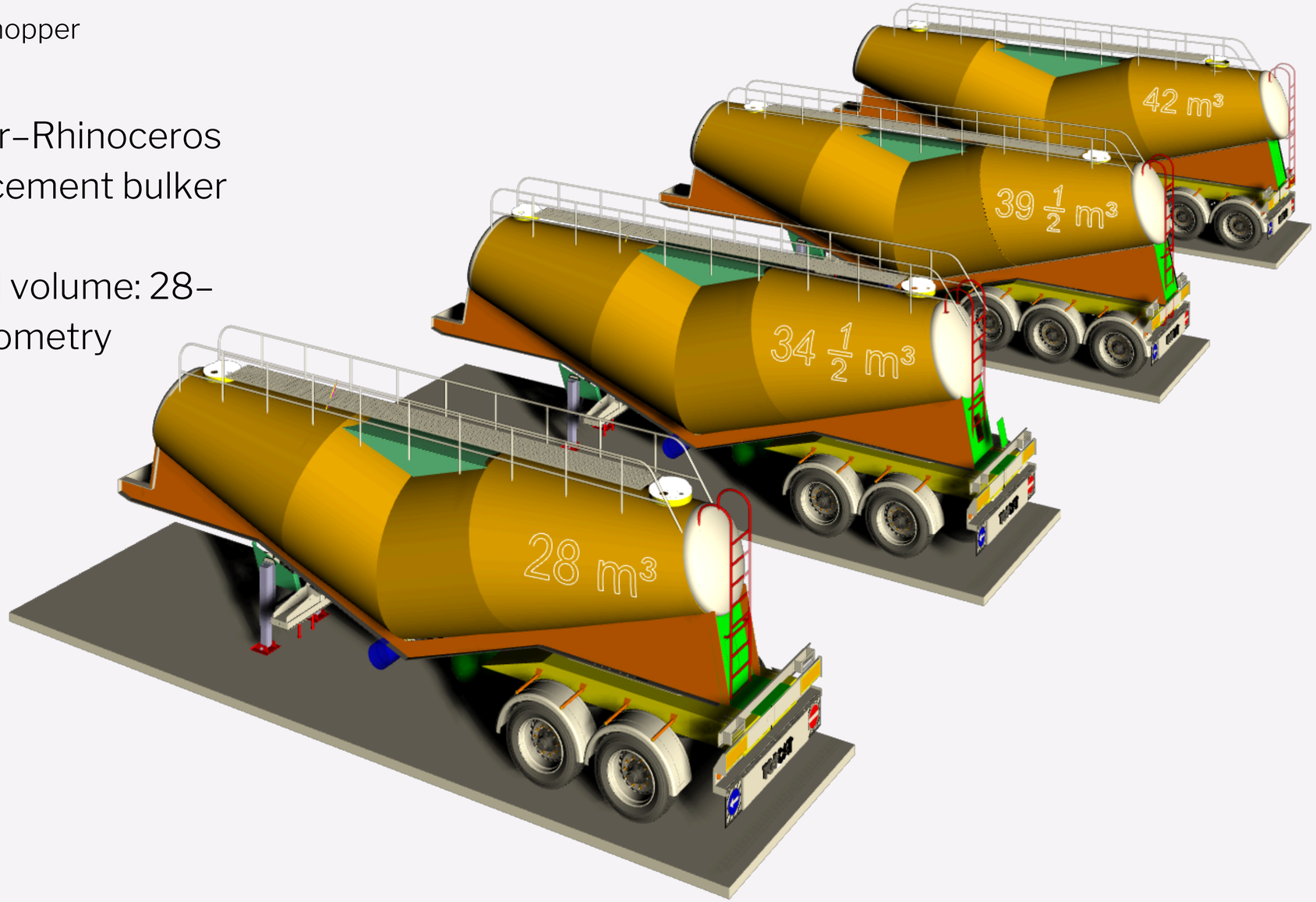


- Two inclination designs for low clearance (a) & rapid loading (b) vehicles.
- Double-acting hydraulic cylinder of 5 tons capacity and 12V DC power pack with integrated reservoir.
- Cylinder: 63 mm bore × 500 mm stroke, clevis-mounted.
- Power pack: Bucher Hydraulics 12V DC, 2.0 kW motor, 8-liter tank.
- ISO 3450 / ISO 6469

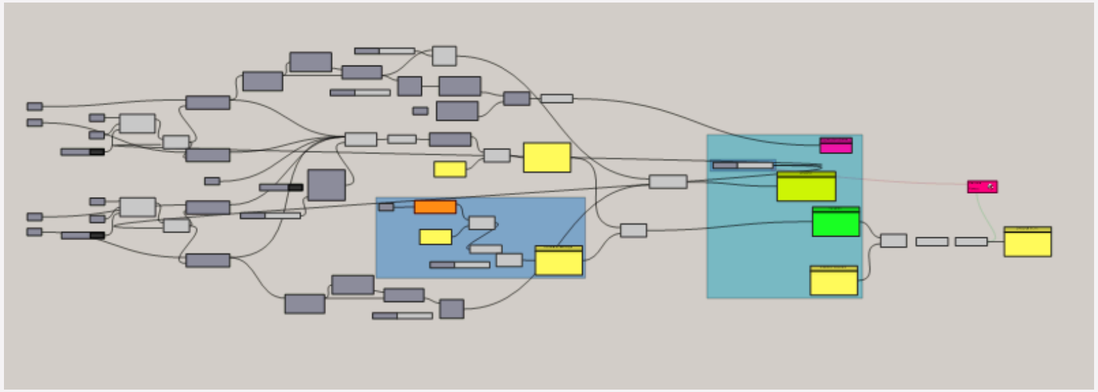
2- Cement Bulker Parametric Design

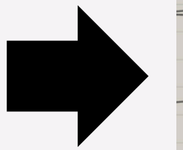
software used: Rhinoceros 3D, Grasshopper

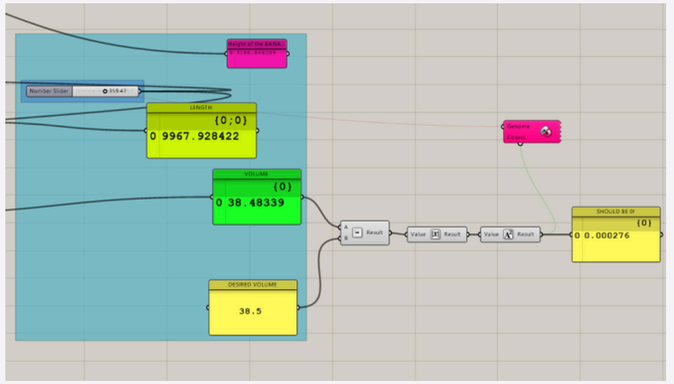
- Developed a Grasshopper–Rhinoceros 3D script for automated cement bulker modeling.
- Client inputs (e.g., desired volume: 28–42 m^3) drive real-time geometry updates.
- Optimization (Galapagos, least square rule) based on geometric equations to maximize payload capacity and discharge efficiency while meeting transport constraints (ADR regulations)

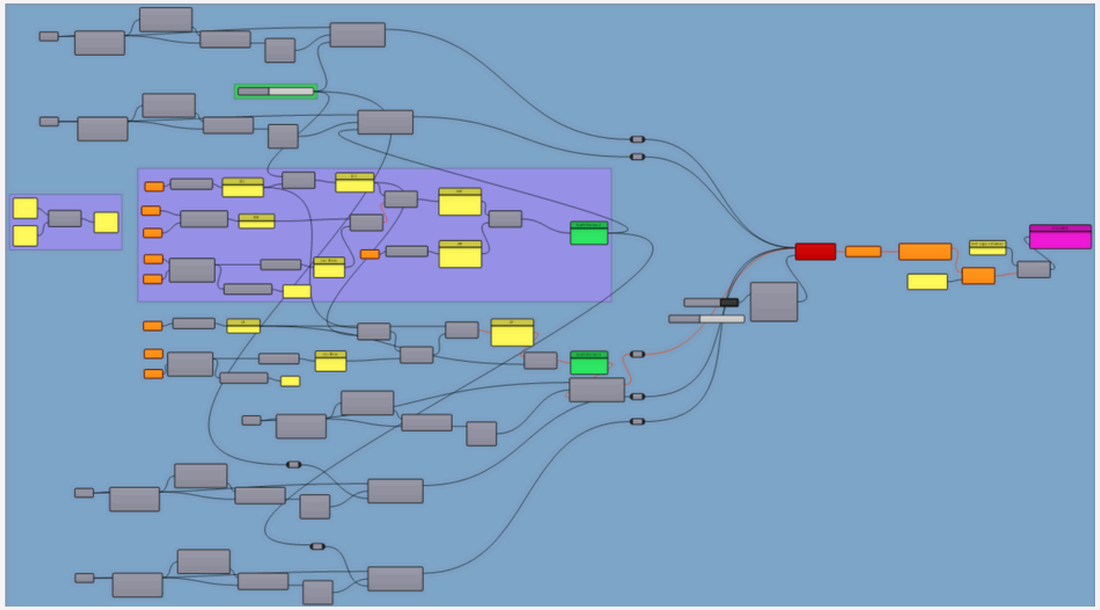


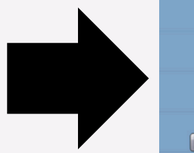
2- Cement Bulker Parametric Design

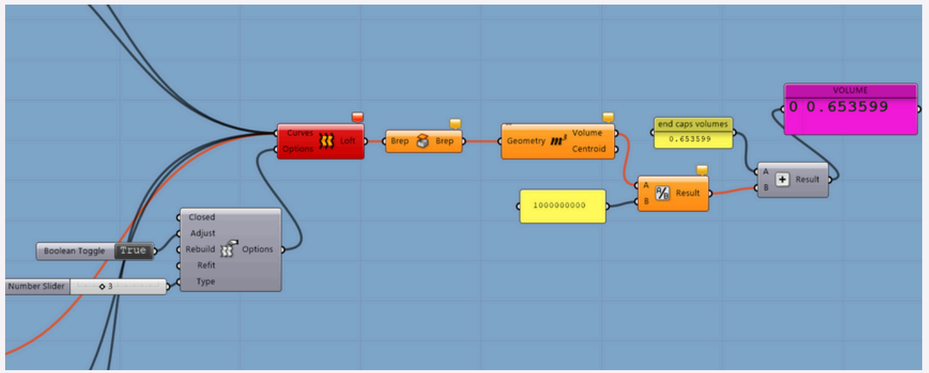








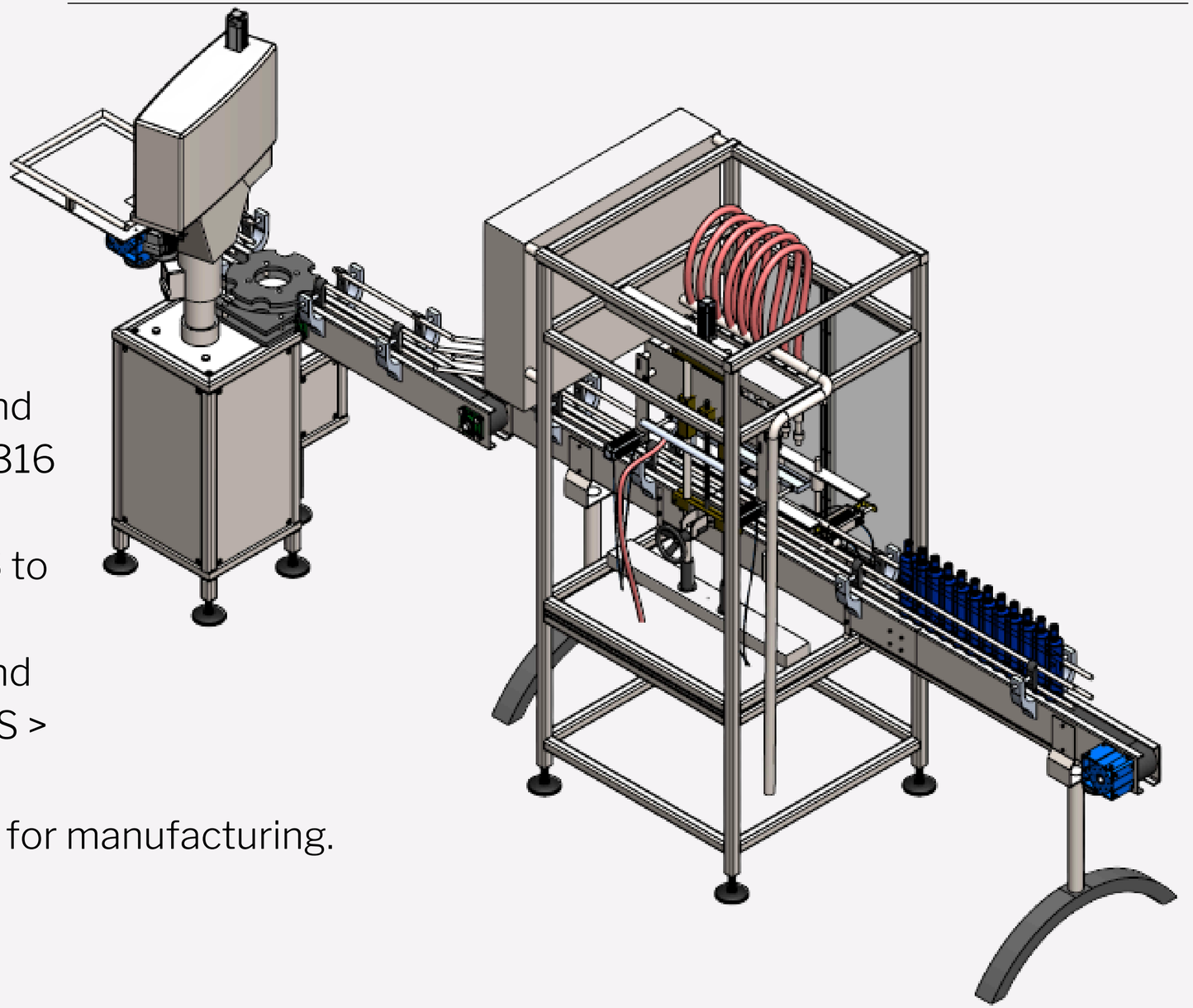




For more details you can watch this video

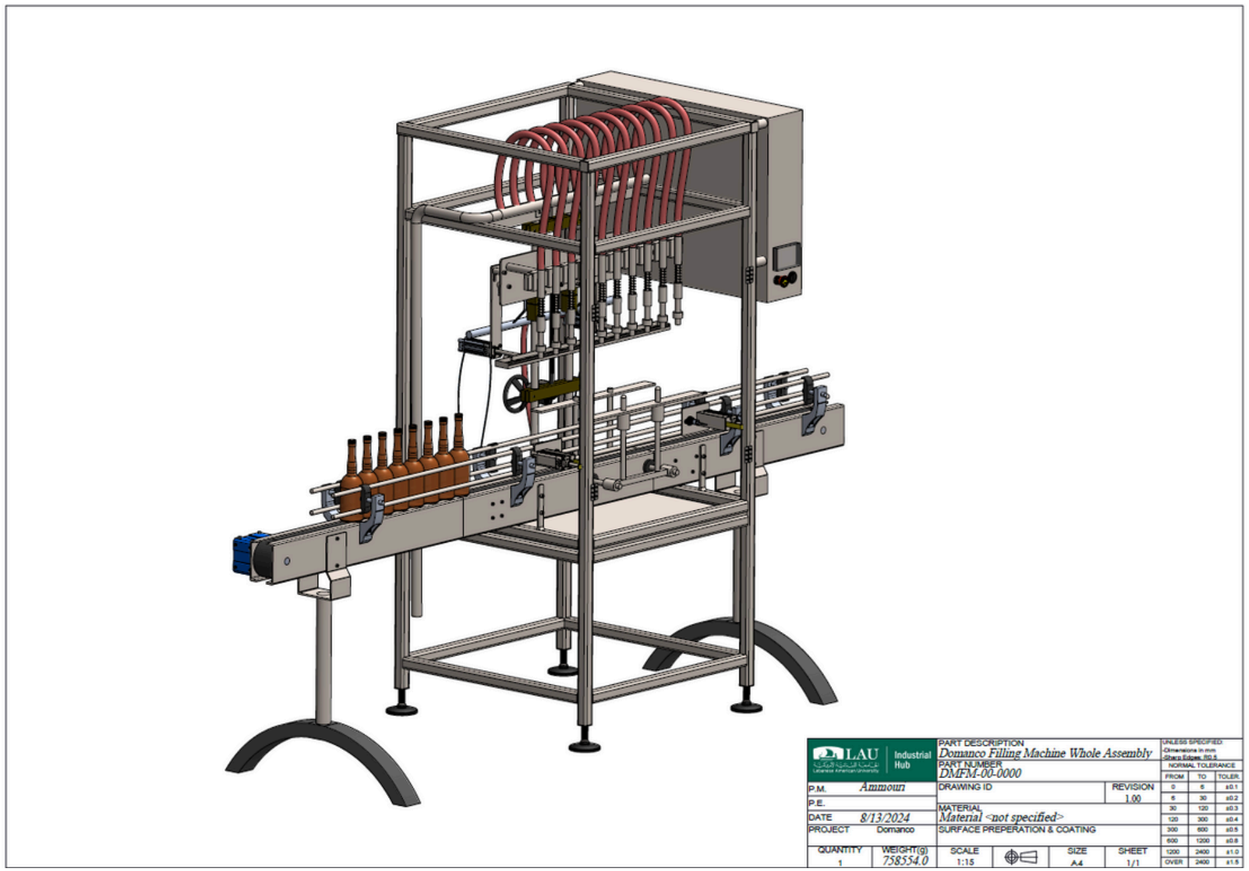
3- Filling and Capping Machines Design

software used: Solidworks23, AutoCAD

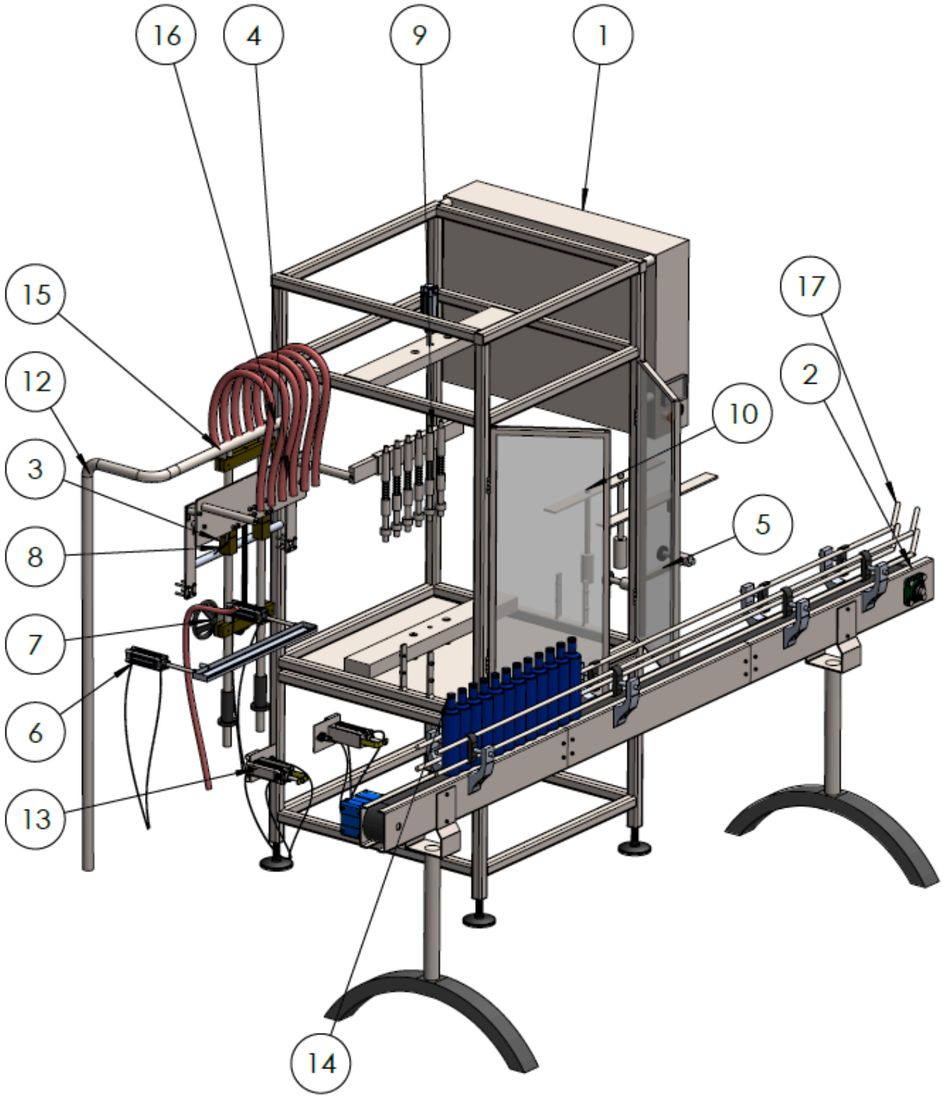


- Inspected and modeled filling and capping machines in CAD (AISI 316 SS).
- Increased filling capacity from 6 to 10 tubes for 600 ml bottles.
- Sized pistons (DSBC-80-160) and verified with stress analysis (FOS > 40).
- Delivered engineering drawings for manufacturing.

3-a- Filling Machine Design



3-a- Filling Machine Design



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	DMFM-01-0000	Chassis Assem	1
2	DMFM-02-0000	Conveyer Assem	1
3	DMFM-03-0000	Vertical Back Support Assem	1
4	DMFM-04-0000	Filling Tubes Back Support Assem	1
5	DMFM-05-0000	Unkown Assem	1
6	DMFM-06-0000	Excess Tray Assem	1
7	DMFM-07-0000	Position Adjusting Assem	1
8	DMFM-08-0000	Retour Main Pipe Assem	1
9	DMFM-09-0000	Filling Tubes Assem	1
10	DMFM-10-0000	Unkown Assem	1
11	DMFM-11-0000	Main Piston Assem	1
12	DMFM-12-0000	Supply Pipe Assem	1
13	DMFM-13-0000	Proximity Sensor / Gate Acturator Assem	2
14	DMFM-14-0000	Bottles Assem	1
15	DMFM-16-0000	Pumping Hose	1
16	DMFM-17-0000	Pumping Hose	1
17	DMFM-19-0000	Bottle Guide Rodes Extension	1

LAU Industrial Hub

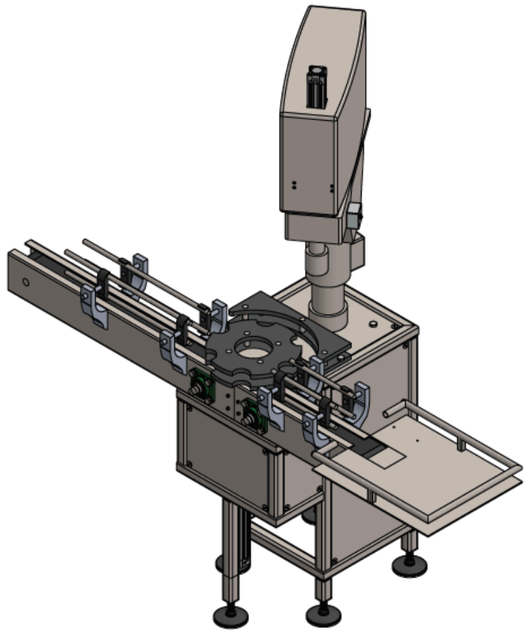
PART DESCRIPTION	Domanco Filling Machine Assem
PART NUMBER	DMFM-00-0000
P.M.	Ammoun
P.E.	
DATE	8/13/2024
PROJECT	Domanco
DRAWING ID	
REVISION	1.00
MATERIAL	Material <not specified>
SURFACE PREPERATION & COATING	
Quantity	1
WEIGHT(g)	710580.6
SCALE	1:20
SIZE	A4
SHEET	1/1

UNLESS SPECIFIED:
-Dimensions in mm
-Sharp Edges: R0.5

NORMAL TOLERANCE

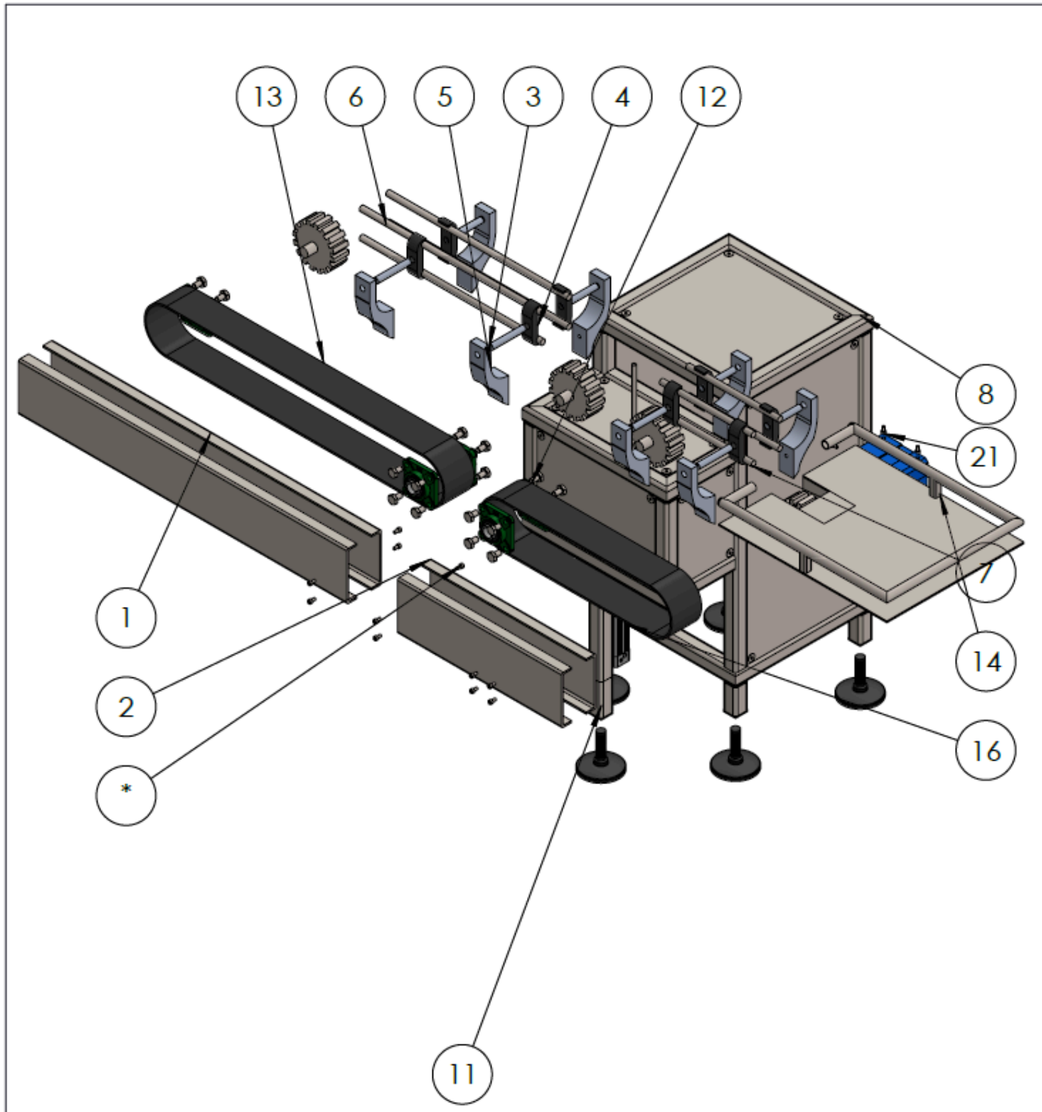
FROM	TO	TOLER.
0	6	±0.1
6	30	±0.2
30	120	±0.3
120	300	±0.4
300	600	±0.5
600	1200	±0.8
1200	2400	±1.0
OVER	2400	±1.5

3-b- Capping Machine Design



LAU Industrial Hub	PART DESCRIPTION: *Capping Machine Assem*			UNLESS SPECIFIED: -Dimensions in mm -Sharp Edges: R0.5	
	PART NUMBER: *DMCM-00-0000*			NORMAL TOLERANCE	
P.M. *Ammoun*	DRAWING ID	REVISION: 1.00		FROM / TO / TOLER.	
P.E.				0 / 6 / ±0.1	
DATE *8/13/2024*	MATERIAL			6 / 30 / ±0.2	
PROJECT Domanco	SURFACE PREPERATION & COATING			30 / 120 / ±0.3	
				120 / 300 / ±0.4	
				300 / 600 / ±0.5	
				600 / 1200 / ±0.8	
QUANTITY: 1	WEIGHT(g): *876557.6*	SCALE: 1:15	SIZE: A4	SHEET: 1/1	1200 / 2400 / ±1.0
					OVER / 2400 / ±1.5

3-b- Capping Machine Design



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	DMFM-02-0001	Conveyer Chassis	1
2	DMCM-01-0001	conveyer extension part	1
3	DMFM-02-0010	Support Bar for Bottles	8
4	DMFM-02-0011	Bottle Guide Clamp	8
5	DMFM-02-0006	Bottle Guide Clamp Support	8
6	DMCM-01-0004	Bottles Guide Rod	4
7	DMCM-01-0005	rod to hold the bottles	4
8	DMCM-01-0100	Chassis Assem	1
9	DMCM-01-0400	Capping Mechanism Support Assem	1
10	DMCM-01-0300	Spiral Plate Assem	1
11	DMFM-01-0200	Leveling Feet Assem	5
12	DMCM-01-0006	Conveyer Belt	1
13	DMCM-01-0007	Conveyer Belt	1
14	DMCM-01-0002	Bottles Tray	1
15	DMCM-01-0008	F205 Motor	5
16	DMCM-01-0500	Pneumatic Piston Assem	2
17	DMCM-01-0010	Connecting Cylinder	1
18	DMCM-01-0011	Piston to connecting cylinder	1
19	DMCM-01-0012	Plate holding piston	1
20	DMCM-01-0013	Rod over piston	1
21	DMCM-01-0600	Conveyer Belt Motor Assem	1
22	DMFM-02-0008	Conveyer Belt Gear	4

LAU Industrial Hub

PART DESCRIPTION	Capping Machine Chassis Assem
PART NUMBER	DMCM-01-0000
P.M.	Ammouri
P.E.	
DATE	8/13/2024
PROJECT	Domanco
DRAWING ID	
REVISION	1.00
MATERIAL	
SURFACE PREPERATION & COATING	
QUANTITY	1
WEIGHT(g)	602228.1
SCALE	1:15
SIZE	A4
SHEET	1/1

UNLESS SPECIFIED:
-Dimensions in mm
-Sharp Edges: R0.5

NORMAL TOLERANCE

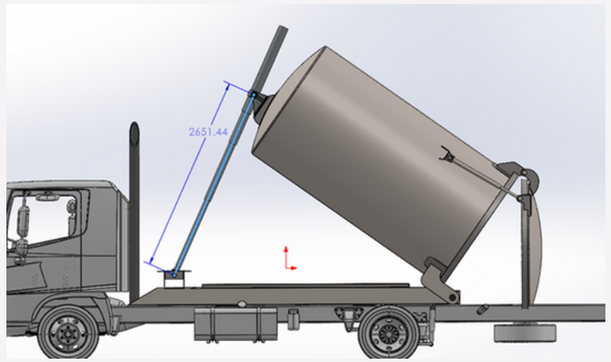
FROM	TO	TOLER.
0	6	±0.1
6	30	±0.2
30	120	±0.3
120	300	±0.4
300	600	±0.5
600	1200	±0.8
1200	2400	±1.0
OVER	2400	±1.5

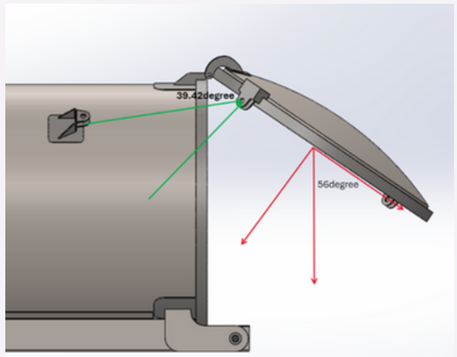
4- Sewage Tank Design

software used: Solidworks23, AutoCAD

- 8000 L Sewage Tank (QTY 4).
- 3-stage front-end hoist (Hyva Alpha 71034211).
- Dual door-lift cylinders, 45° opening for fast discharge.

4- Sewage Tank Design



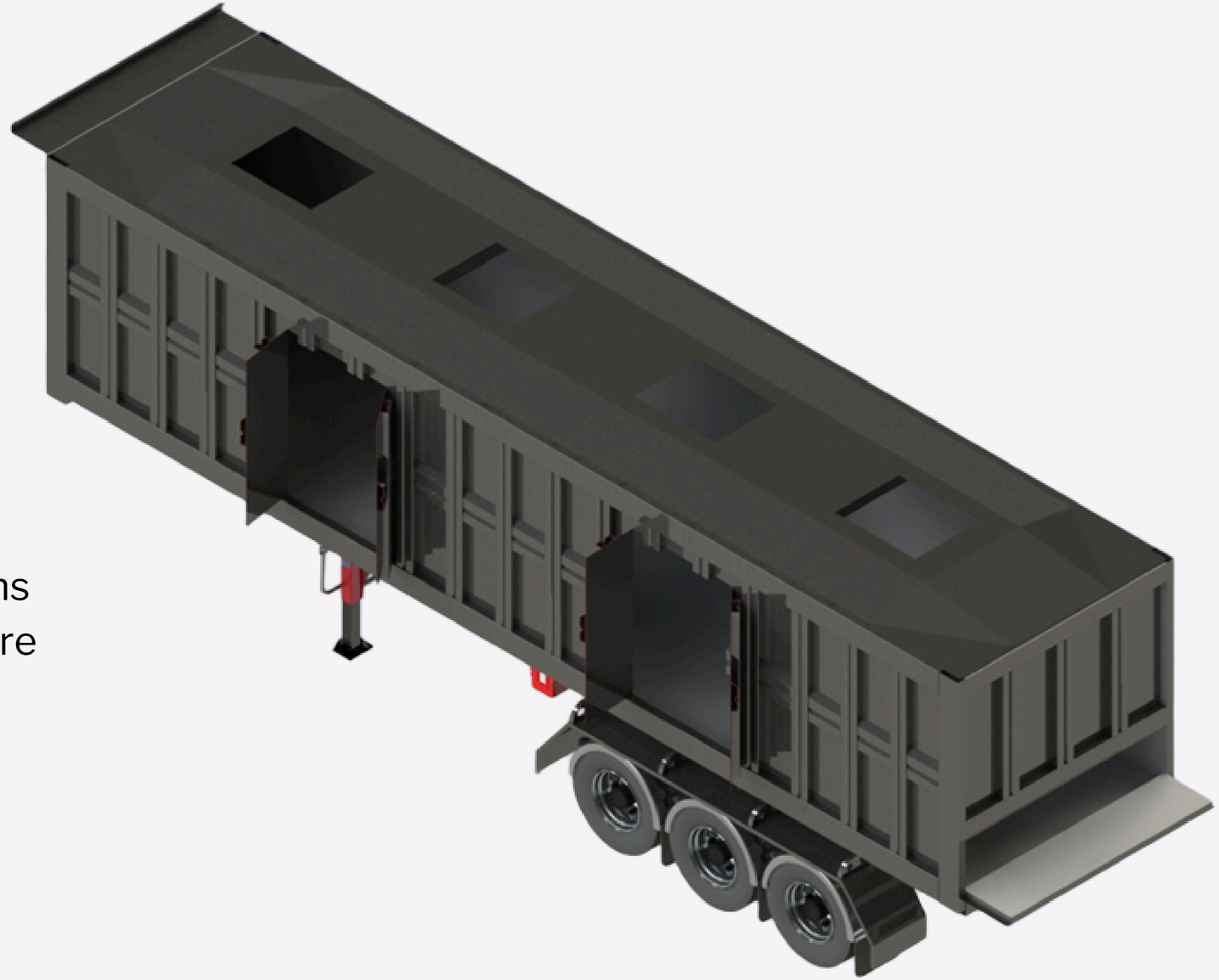


- checked CG shift and tipping stability over full/empty conditions.
- calculated required dump force & stroke for all hydraulics.
- Created assembly and fabrication drawings for production

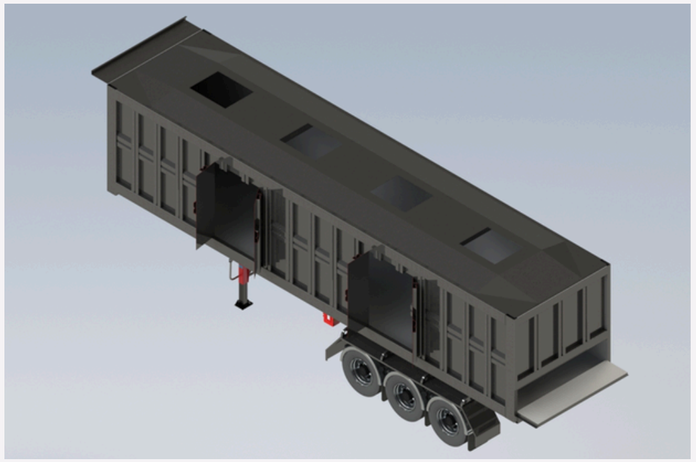
5- Wheat Trailer Designs

software used: Solidworks23, AutoCAD

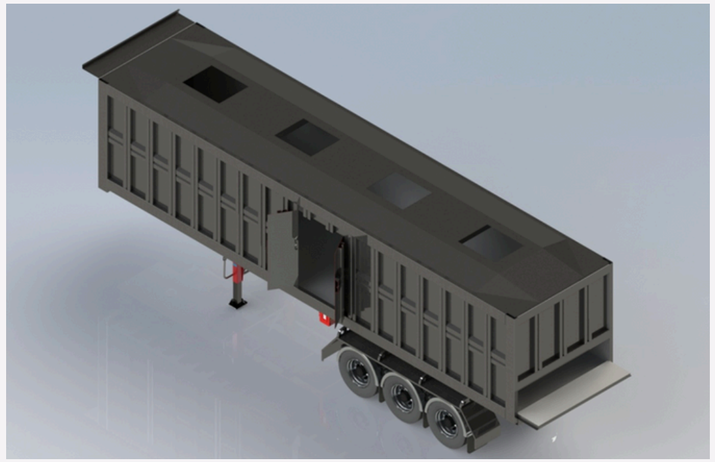
- Wheat Trailer Design with 6 different configurations
- Capacity: 62 m3 following the maximum axle load limits (per ECE).
- Tandem triple axle trailer for heavy loads activities.
- Performed structural simulations to verify load capacity and ensure no failure



5- Wheat Trailer Designs



conf 1



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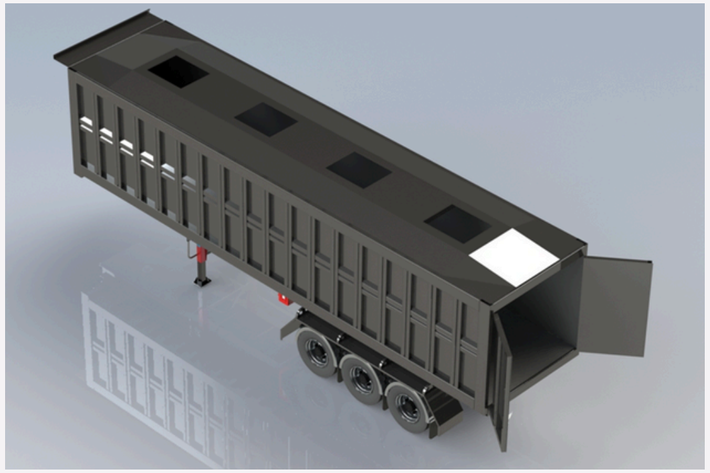

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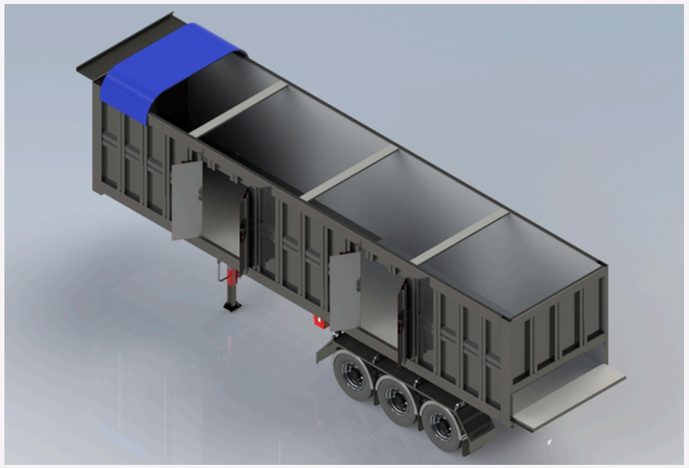

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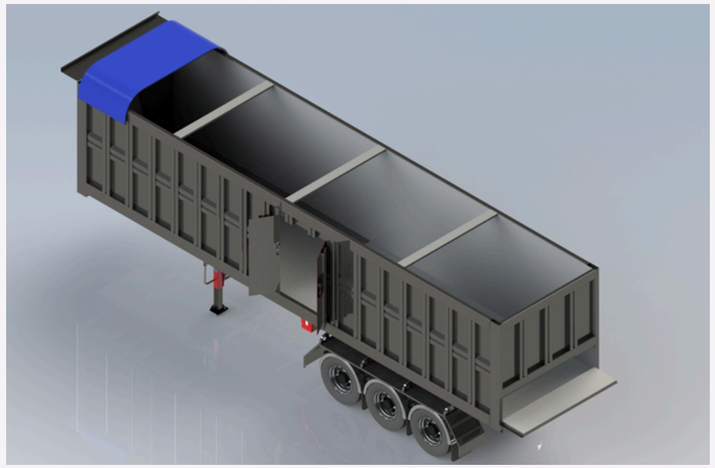

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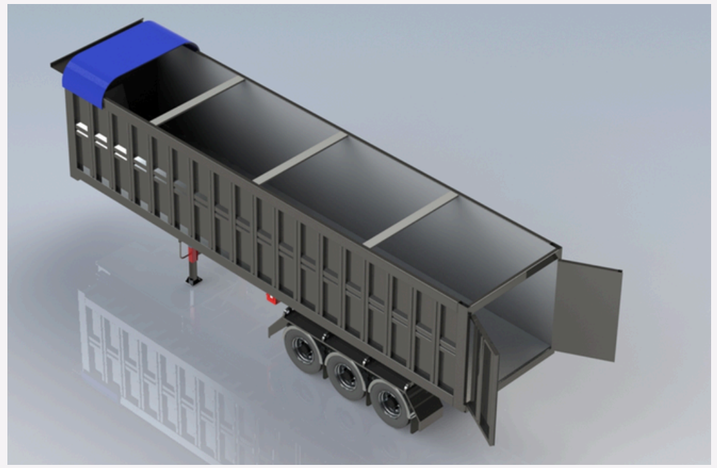
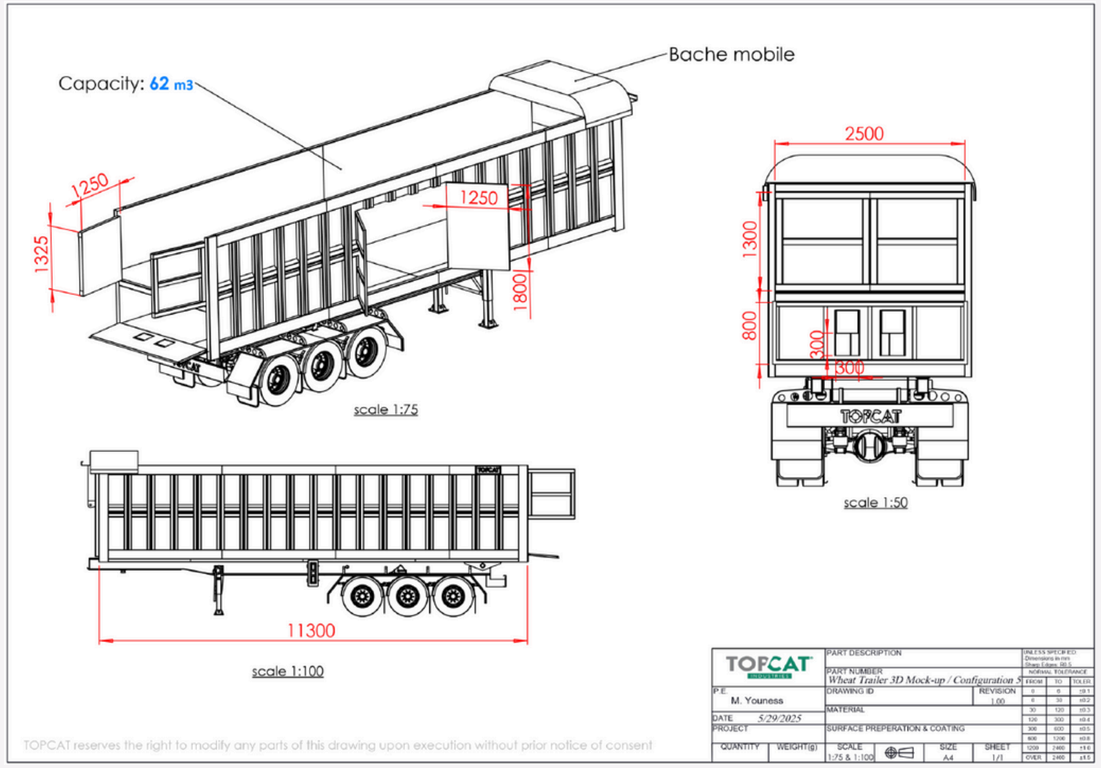


conf 6

5- Wheat Trailer Designs

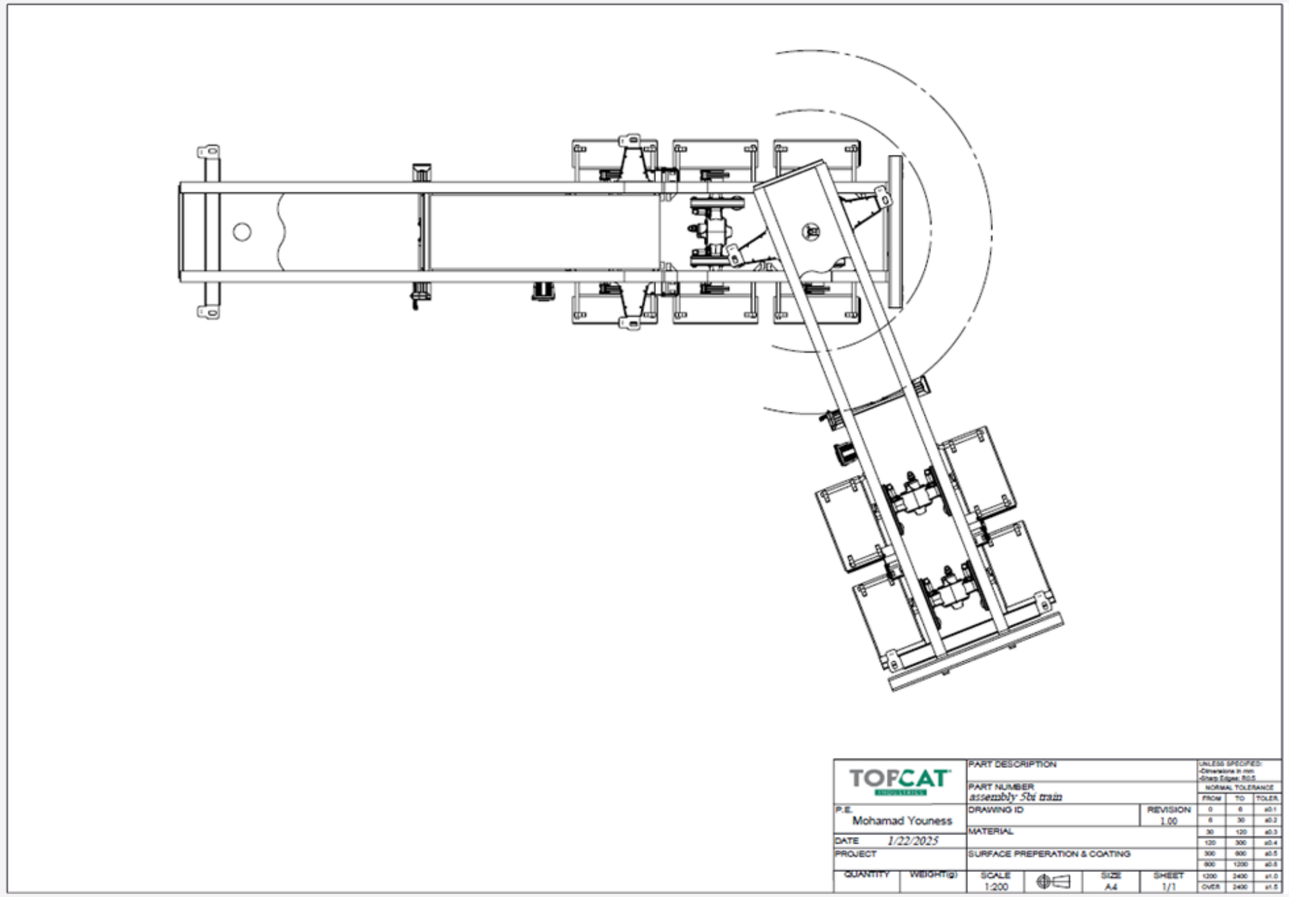


6- Bi-train Design

software used: Solidworks23, AutoCAD

- Modeled a bitrain truck with articulated trailers.
- Designed chassis and load distribution for realistic operation.
- Verified stability and compliance with axle load regulations through simulations.
- Focused on maneuverability, trailer articulation, and payload capacity.

6- Bi-train Design



Contact Information

Mohamad Youness

ADDRESS

Al-Jamaat St., Nabatieh
South Governate, Lebanon

EMAIL

mohamadyouness03@gmail.com

PHONE

+ 961 76 530 991

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