BRUNA GUEDES

CAD Portfolio

TABLE OF CONTENTS

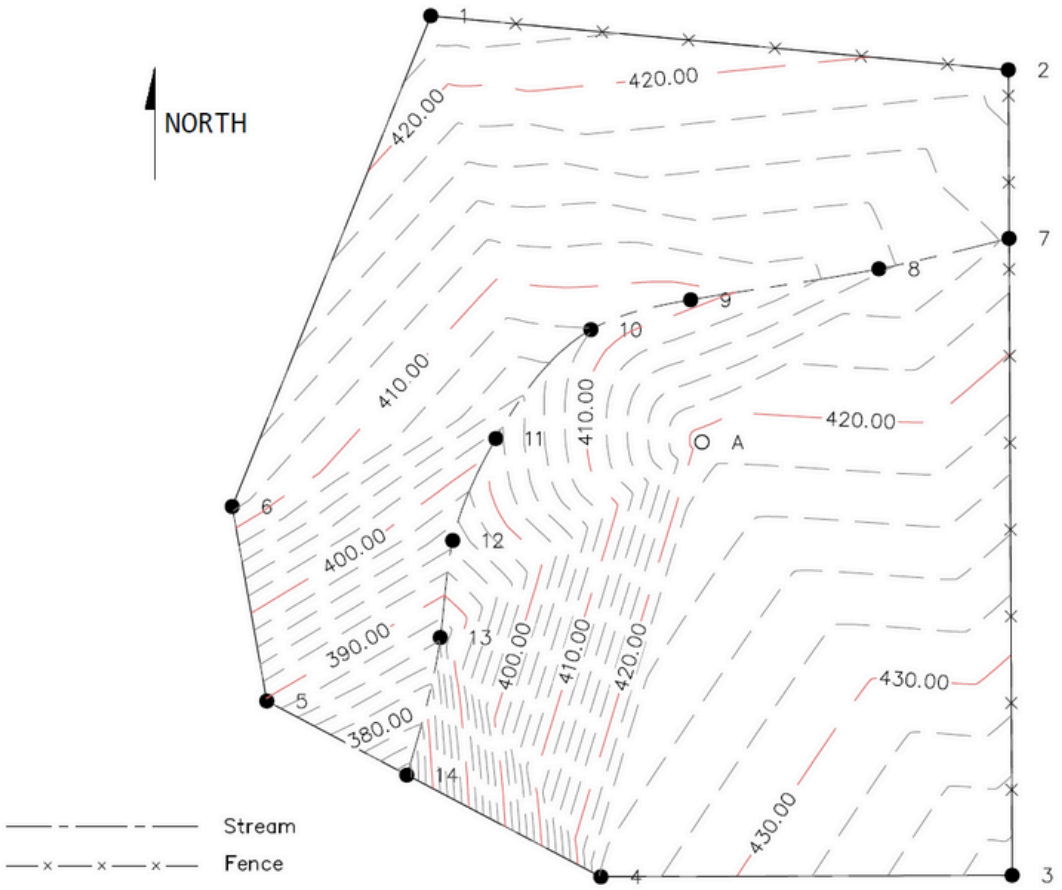
Downloadable Files at:

https://drive.google.com/drive/folders/1Z981i0JDz93-D12iYd5sdFe3clUqPaiW?usp=share_link

BLEIKVERGAN COMPLEX

CIVIL3D Software

01



Designed by IVYTECH	Checked by URIEL	Approved by – date 11/07/22	Filename P8-8	Date 11/07/22	Scale 1=100'
GUEDES		PROBLEM-8-8			
		DRAWING_NUMBER_1		Edition A	Sheet 1

THE CHALLENGE

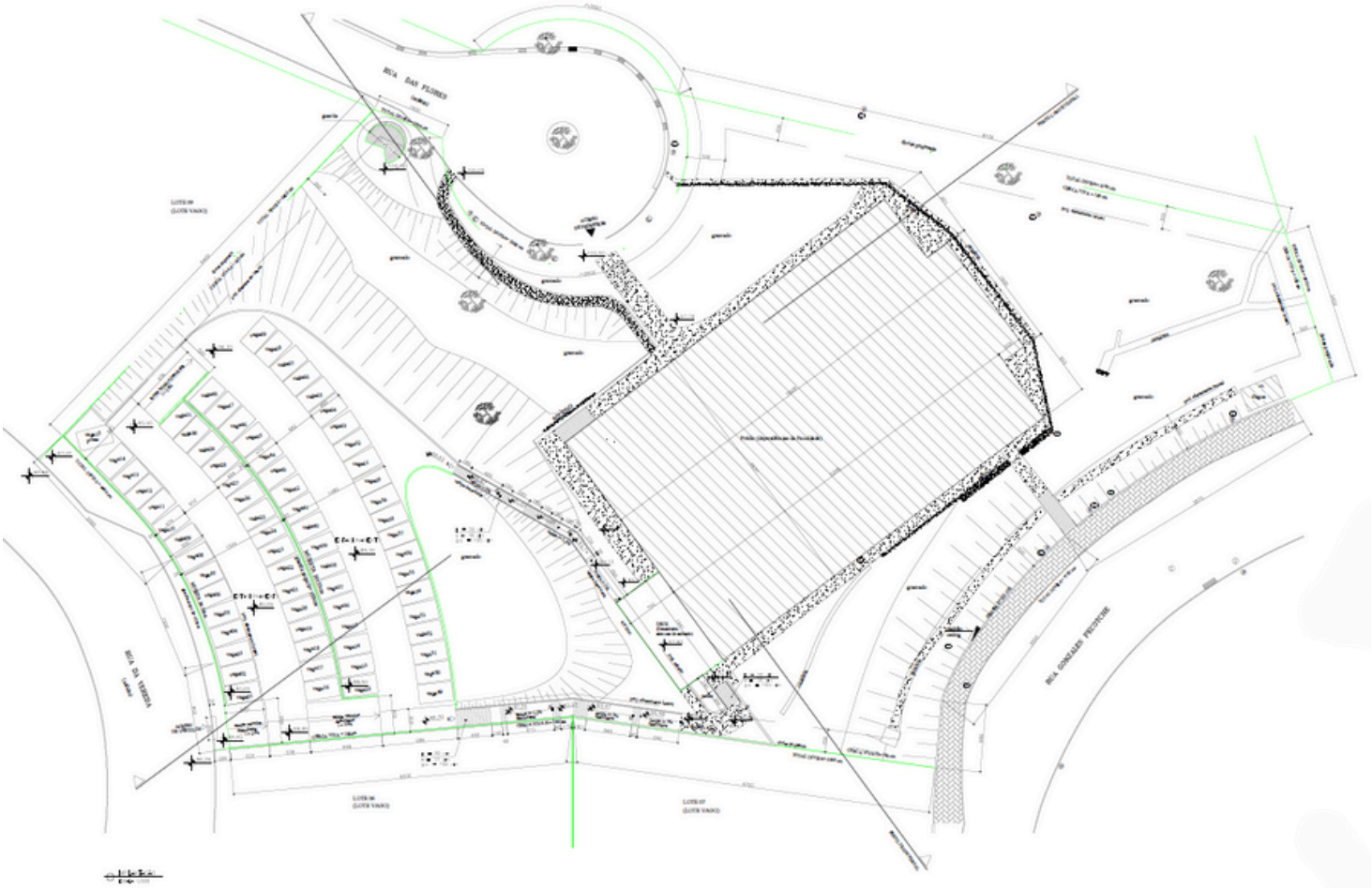
The terrain study of the Bleikvergan complex was completed, and contouring data on the terrain was extracted as a large pool of points. The client wanted a precise 2d representation of the terrain's surface before meeting with a civil engineer to plan construction and future building placement.

THE SOLUTION

With the information gathered from surveying, I could sort the points data, import them into Civil3D, attribute them into respective layers, and create a site surface. I was then able to represent the terrain by extracting contour lines from the generated model and creating the topographic drawing with accurate surface representation for future development.

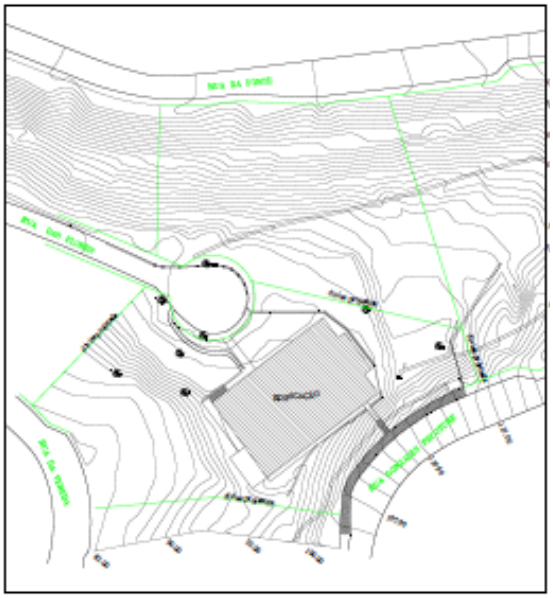
02 Road Design for International School Site

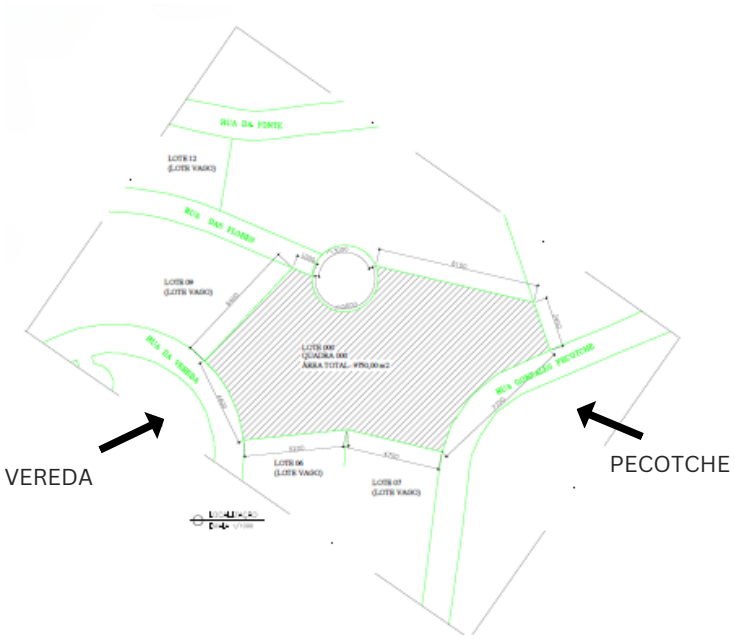
AUTOCAD, CIVIL3D Software



THE CHALLENGE

The client, who wanted to establish an International School at the site, was worried that after the land purchase and heavy investment in reformation, students and staff would face terrible traffic due to the bad condition of the existing roads that give access to the terrain. The existing roundabout, which remains in acceptable condition, would not suffice the traffic demand. The client then required the reconstruction of the two roads, Rua da Vereda and Rua Gonzales Pecoche, for school access to improve traffic at the location.





Volume Summary							
Name	**Type**	**Cut Factor**	**Fill Factor**	**2d Area** (sq.m)	**Cut** (Cu. M.)	**Fill** (Cu. M.)	**Net** (Cu. M.)
VOL-VEREDA	full	1.000	1.000	1790.99	607.15	518.60	88.55<Cut>
VOL-PECOTCH	full	1.000	1.000	2003.03	687.95	787.95	100.00<Fill>

Totals				
	2d Area (sq.m)	**Cut** (Cu. M.)	**Fill** (Cu. M.)	**Net** (Cu. M.)
Total	3794.02	1295.10	1306.55	11.45<Fill>

* Value adjusted by cut or fill factor other than 1.0

THE SOLUTION

By recreating the entire site on Civil3D, using the provided elevation and existing construction data, I could extract and visualize the contouring of the terrain and adjacent areas. Following road planning principles, I calculated both roads' cut and fill aspects, demonstrated on the Volume Summary, to be followed in the reconstruction process.

03 PARTS FOR PRODUCTION: MODELS AND DRAWINGS

INVENTOR Software

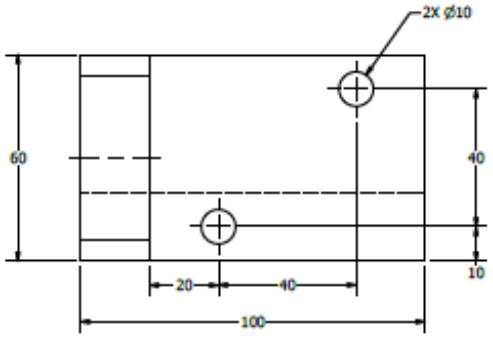
THE CHALLENGE

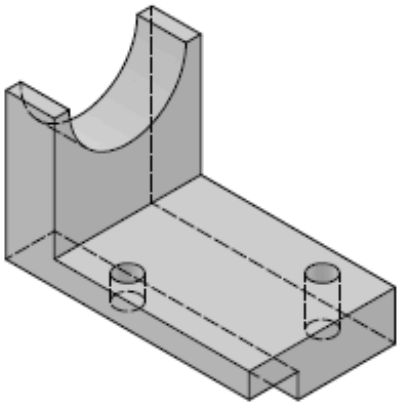
The client wanted all of the parts required to assemble a product modeled and drafted for production

THE SOLUTION

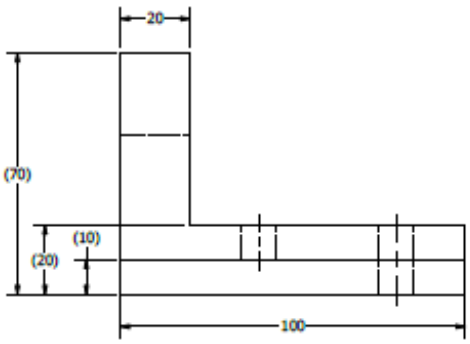
Using Inventor software, I was able to model and draw to-scale detailed drafts of each of the required parts for production.

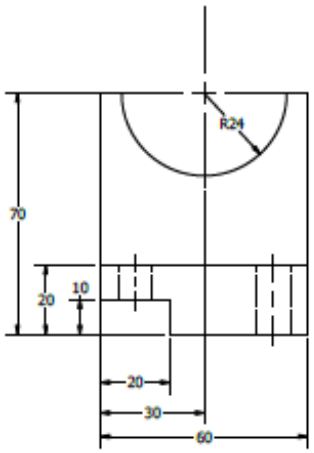
PART 1





ISOMETRIC VIEW
SCALE 1 : 1





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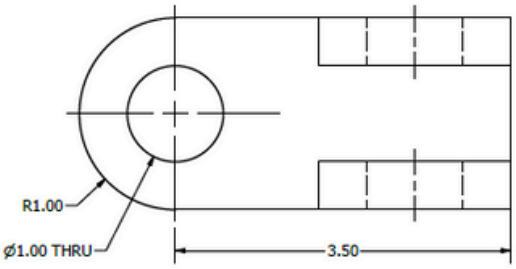

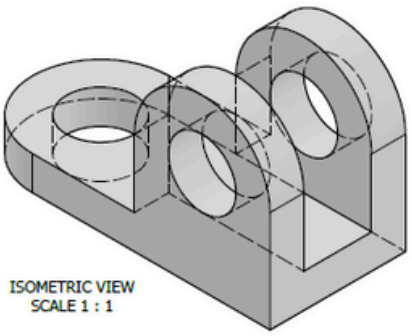

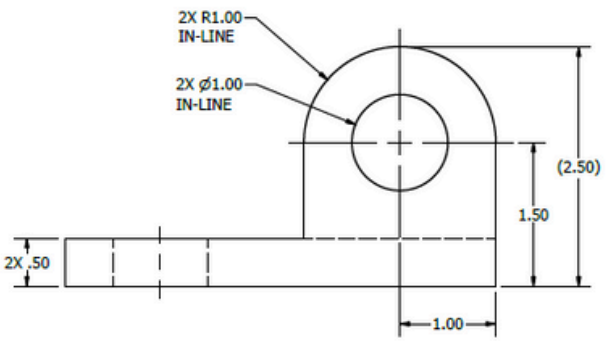

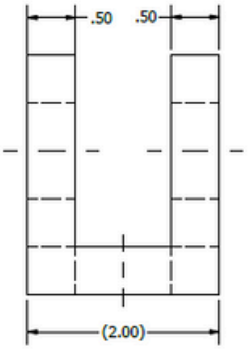

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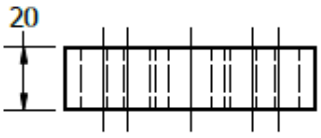
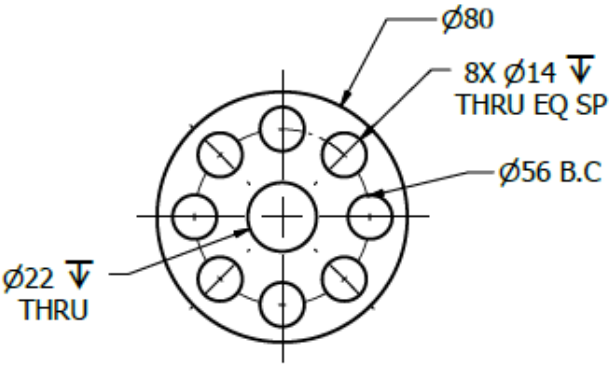
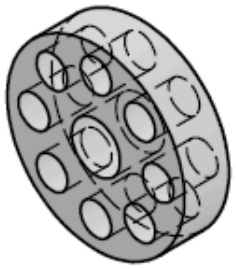
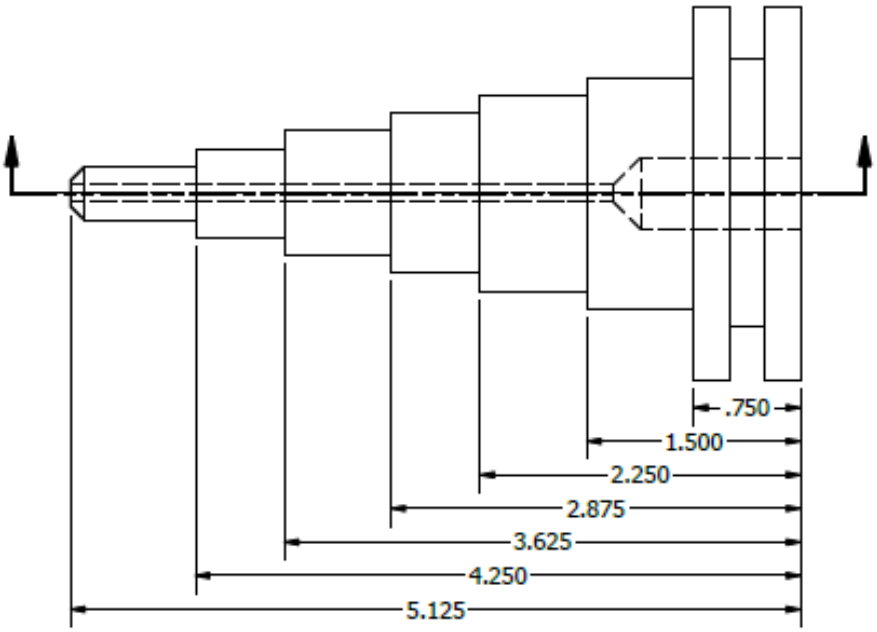






ISOMETRIC VIEW
SCALE 1 / 2

PART 4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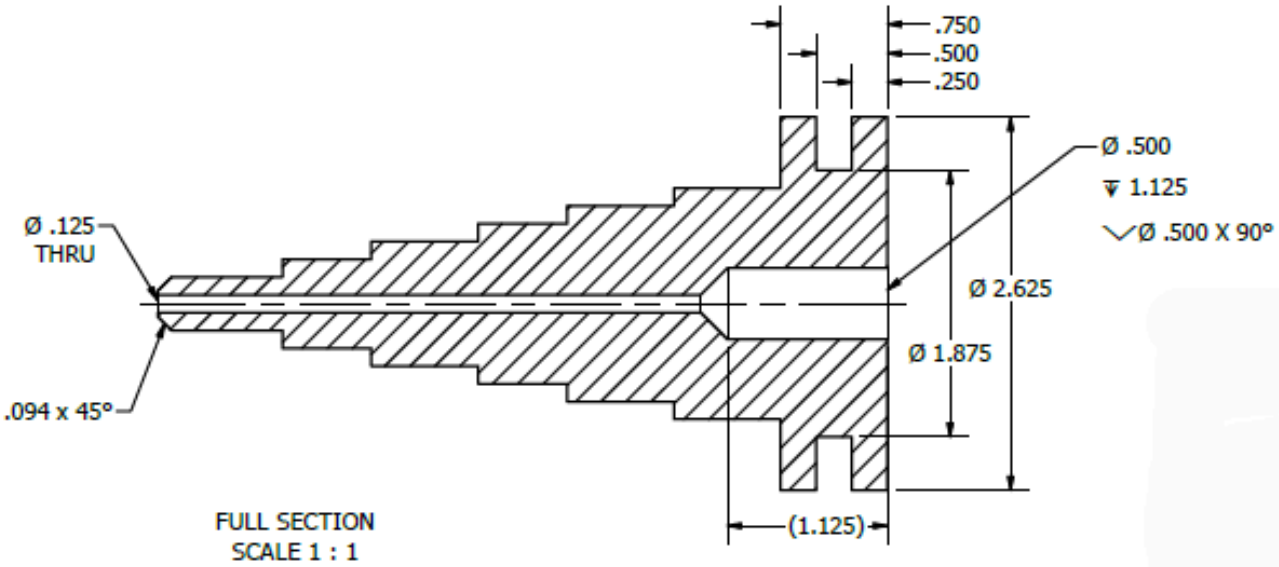
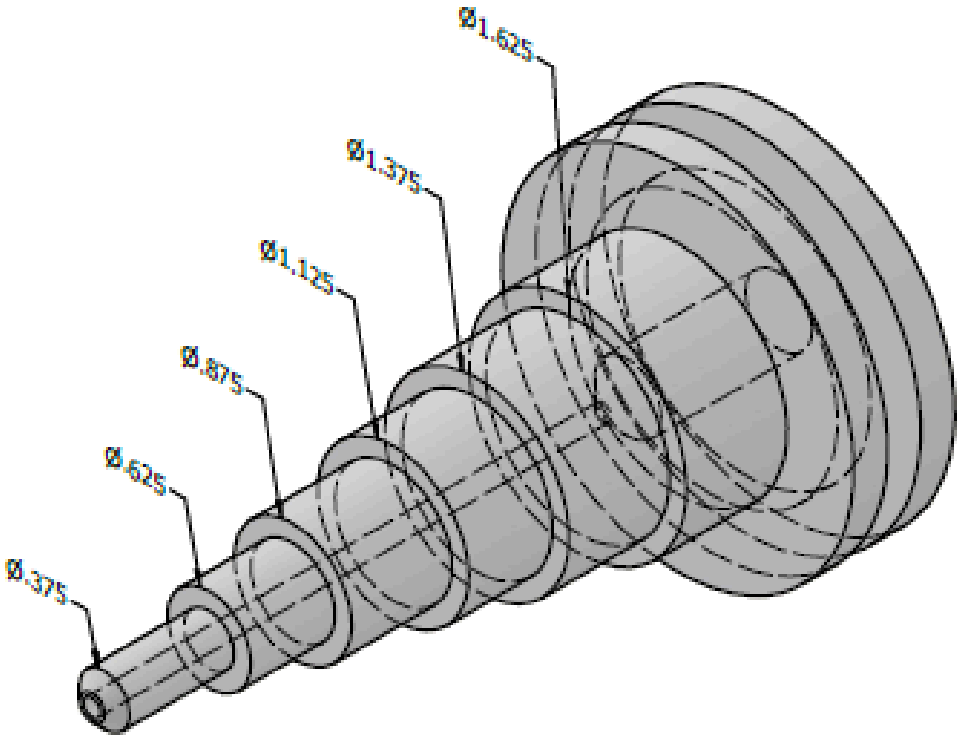
2.250
2.875
3.625
4.250
5.125

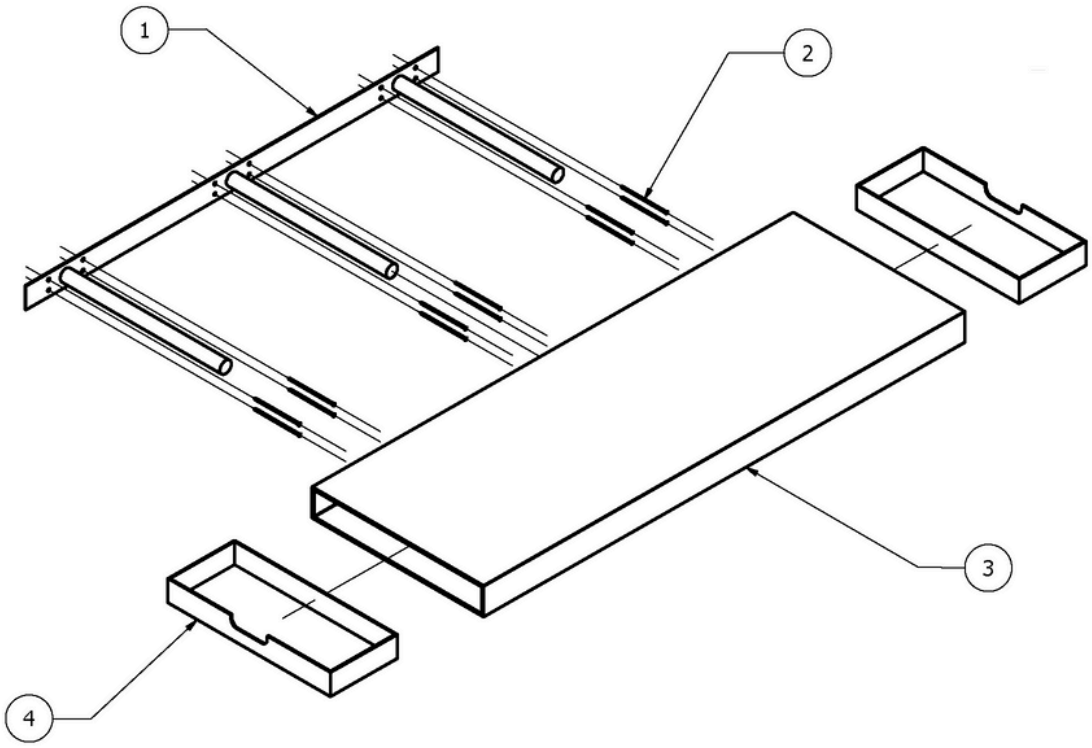

.750
.500
.250
Ø .500
1.125
Ø .500 X 90°
Ø .125
THRU
.094 x 45°
Ø 2.625
Ø 1.875
(1.125)
FULL SECTION
SCALE 1 : 1



ISOMETRIC VIEW
SCALE 1 : 1

04 Product Design: Hidden Compartment Shelf

INVENTOR Software



PARTS LIST					
ITEM	QTY	PART NUMBER	MATERIAL	APPEARANCE	MASS
1	1	Guedes_Project_Model_Bracket	Stainless Steel	Semi-Polished	10.7930 lbmass
2	12	Guedes_Project_Model_Screw	Stainless Steel	Chrome - Polished	0.0113 lbmass
3	1	Guedes_Project_Model_Shelf	Wood (Oak)	White	30.6032 lbmass
4	2	Guedes_Project_Model_Compartment	Acrylic	Glossy - Black	0.7547 lbmass

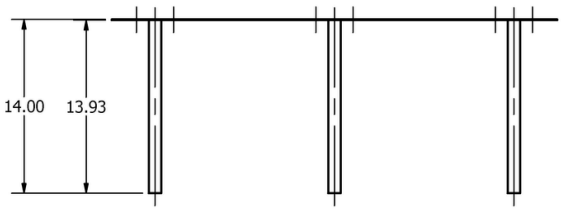
THE CHALLENGE

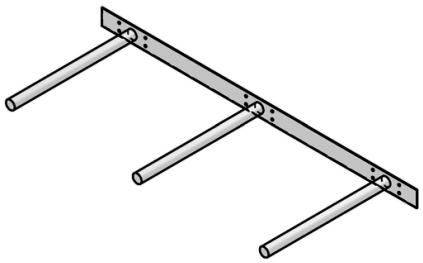
The client is a Lego collector and needs a compact display solution for his new car sets. He complained about how normally his Lego sets end up all over his apartment and create a disorganized environment. Furthermore, he mentioned that he often finds little Lego replacement parts where they should not be.

THE SOLUTION

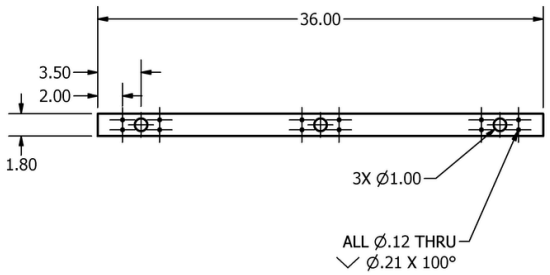
This product is a floating display shelf with hidden storage compartments. With a minimalist style, the shelf appears to be floating so that the walls do not feel too crowded. On this shelf there is enough space to fit his two biggest car sets, the McLaren Senna GTR™ (with 3 in. high, 12 in. long, and 4 in. wide measurements) and the Bugatti Bolide (with 3 in. high, 12 in. long, and 5 in. wide measurements), as well as the remaining loose parts, so that all pieces are organized and placed together.

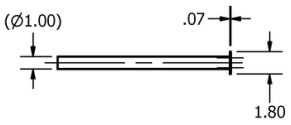
PART 1 - Stainless Steel Bracket



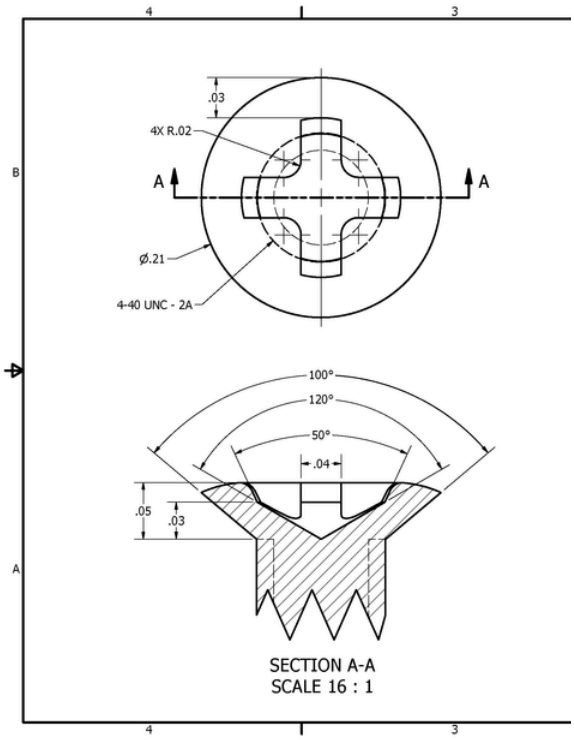


ISOMETRIC VIEW
SCALE 1 / 8

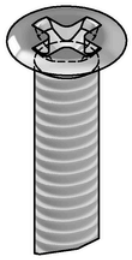




PART 2 - Stainless Steal Screw

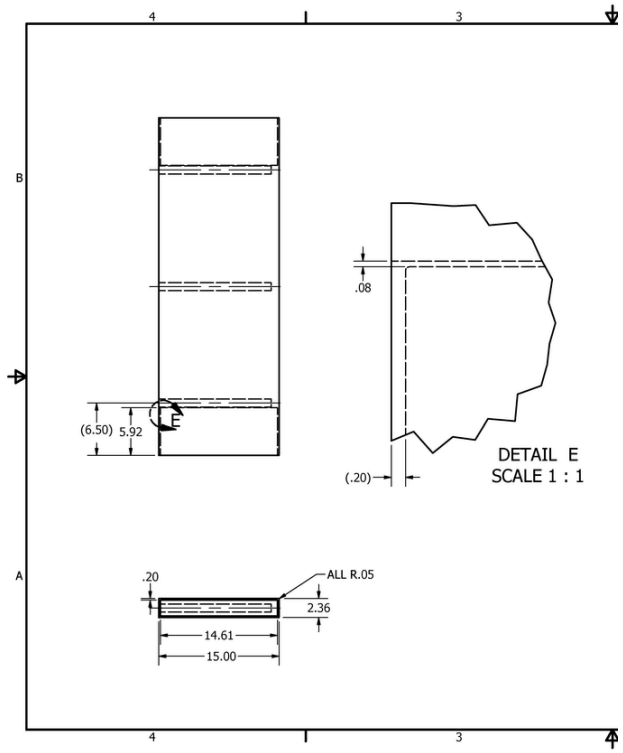


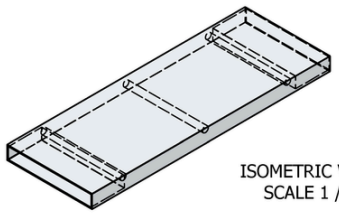
ISOMETRIC VIEW
SCALE 1 : 1



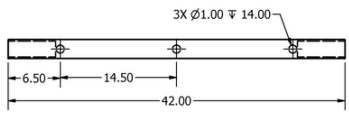
THREAD DETAIL VIEW D
SCALE 8 : 1

PART 3 - Wood Shelf

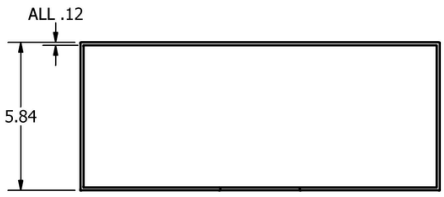


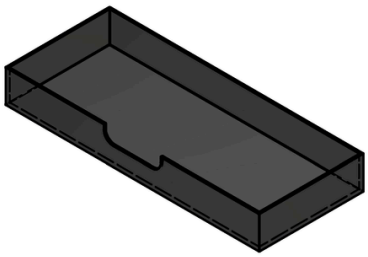


ISOMETRIC VIEW
SCALE 1 / 9

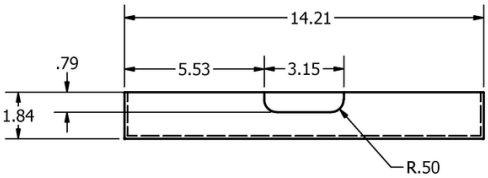


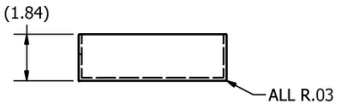
PART 4 - Acrylic Compartment



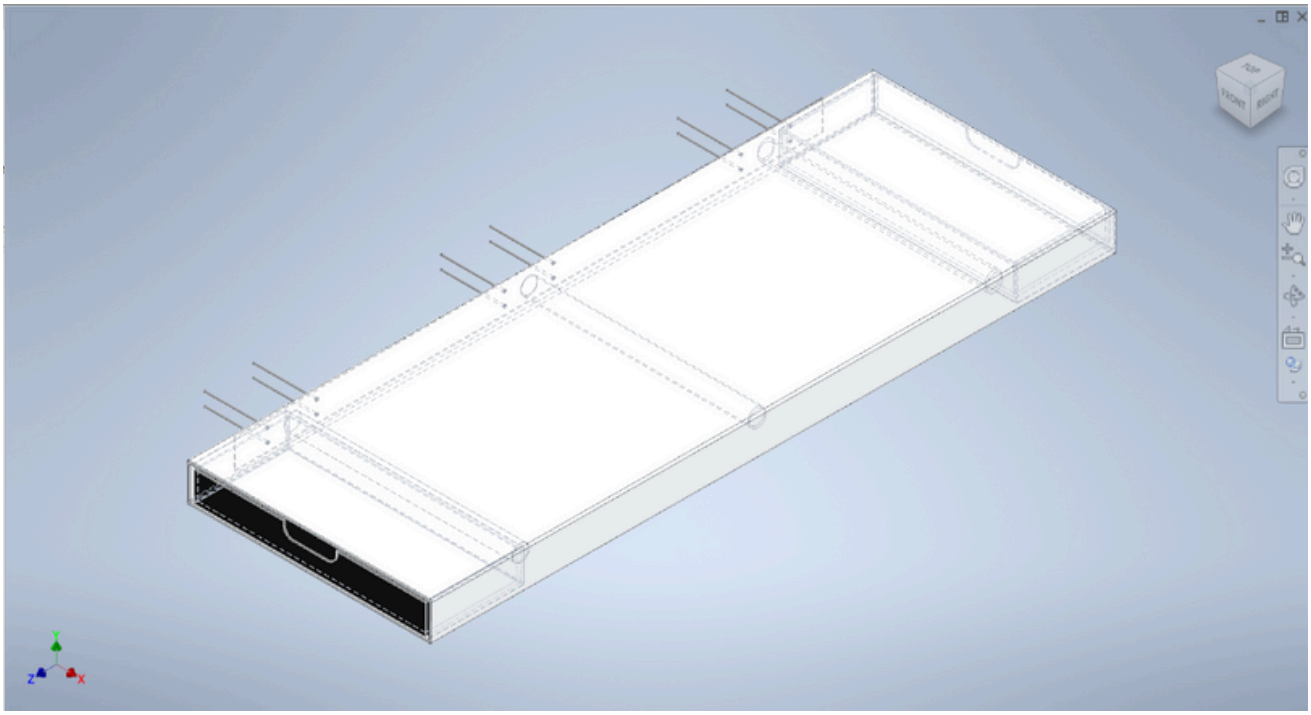


ISOMETRIC VIEW
SCALE 1 / 4





FULL SHELF



05 AUTOMATED MODELS AND DRAWING ADJUSTMENTS

INVENTOR Software

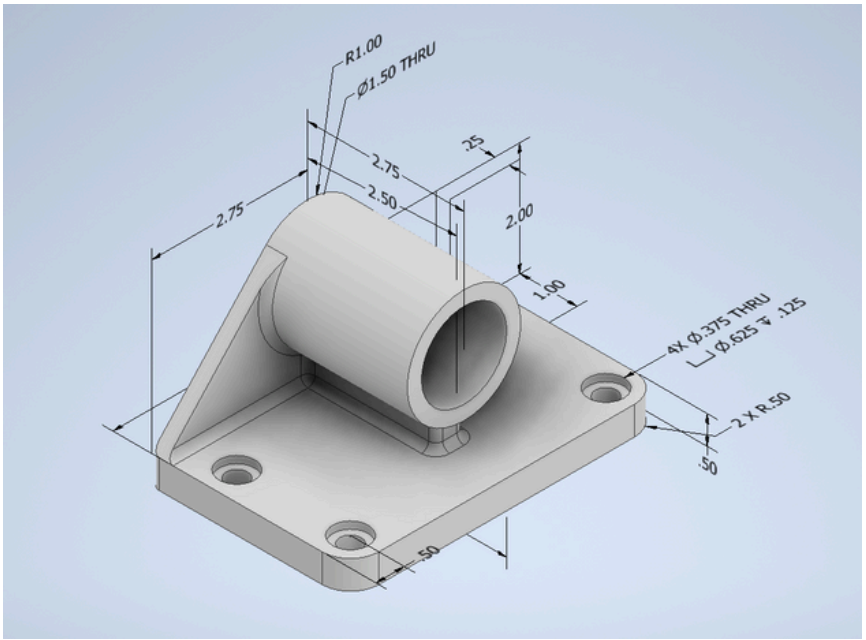
THE CHALLENGE

The client was facing a time management issue due to models being individually created each time a new part was to be drawn. Closely similar products with slight variations were therefore taking too much of the company's time, with each having to be repeatedly created from scratch.

THE SOLUTION

I reduced parts' modeling and drafting time significantly by automating models so that each time the model is placed in an assembly, it can be adapted accordingly to its functions and iPart properties. A certain length, the weight of the part, the number of holes, and spacing between feature repetitions, for example, are all characteristics that can often change within models. This method allows models to be created quickly by modifying values in the model's Parameters table.

	Member	Part Number	Central_Hole_Diam
1	Guedes_Bracket-01	Guedes_Bracket-01	1.5 in
2	Guedes_Bracket-02	Guedes_Bracket-02	1.2 in
3	Guedes_Bracket-03	Guedes_Bracket-03	.8 in



	Member	Part Number	Central_Hole_Diam
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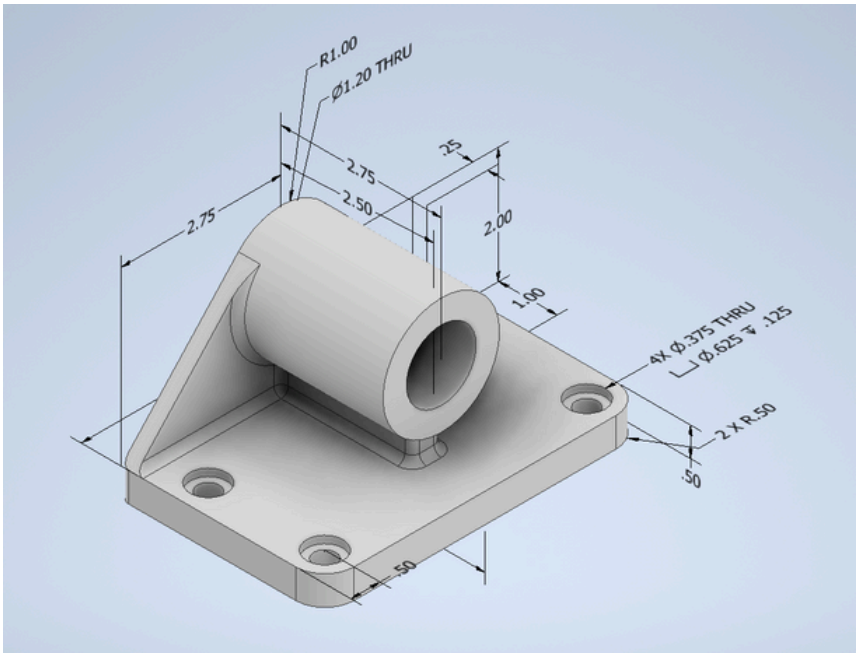
2	Guedes_Bracket-02	Guedes_Bracket-02	1.2 in
3	Guedes_Bracket-03	Guedes_Bracket-03	.8 in



	Member	Part Number	Central_Hole_Diam
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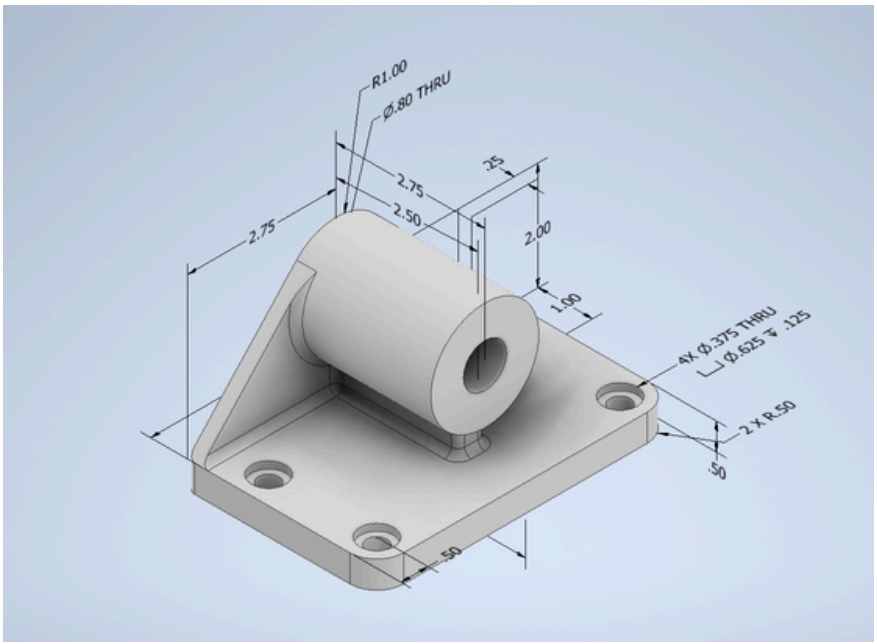
2	Guedes_Bracket-02	Guedes_Bracket-02	1.2 in
3	Guedes_Bracket-03	Guedes_Bracket-03	.8 in



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CAD Portfolio