Deliverable E: Project Schedule and Cost

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Design Drawings

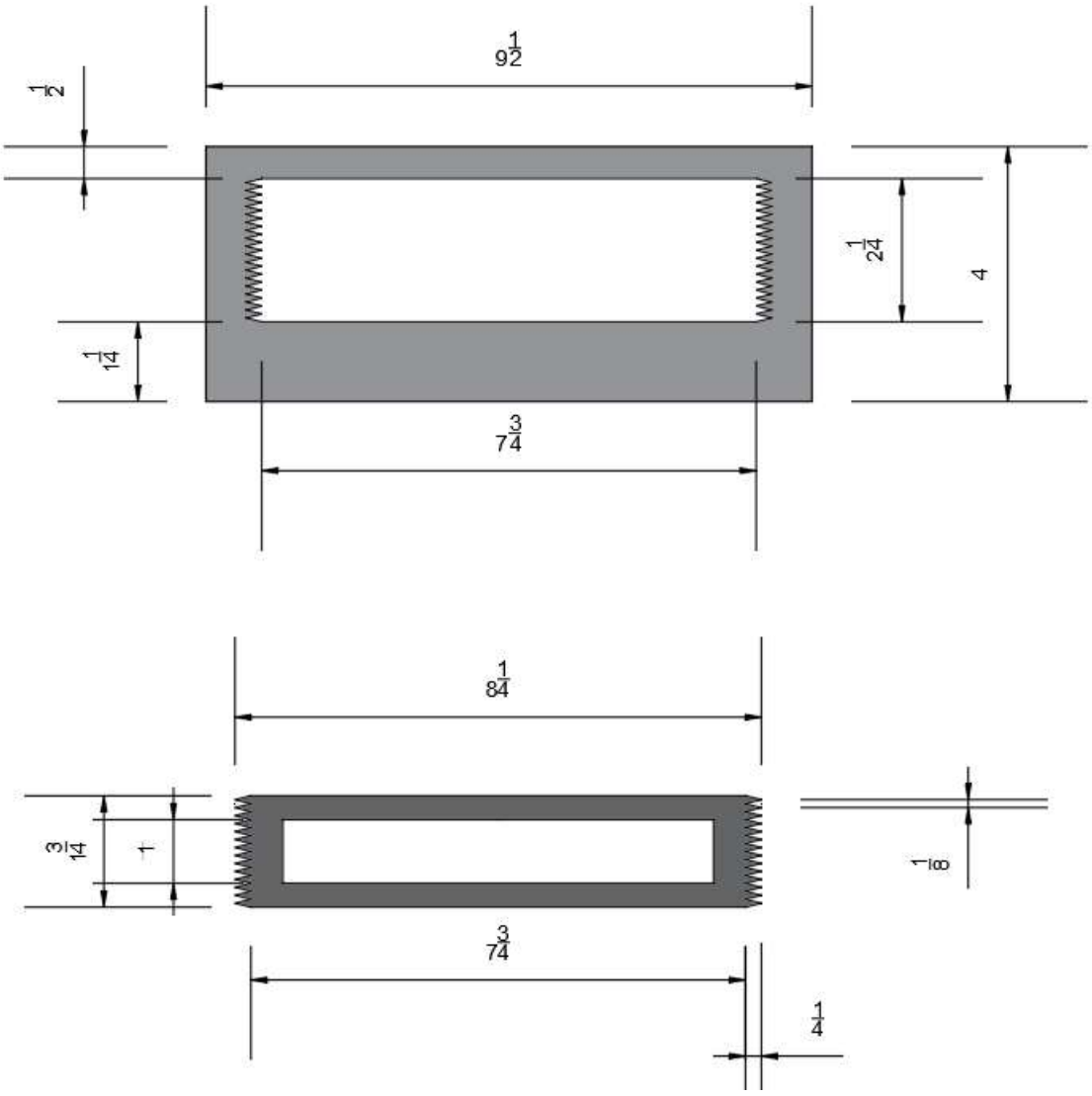

Figure 1. Top-View Schematic of Jig Design and the Cut-out Including Dimensions

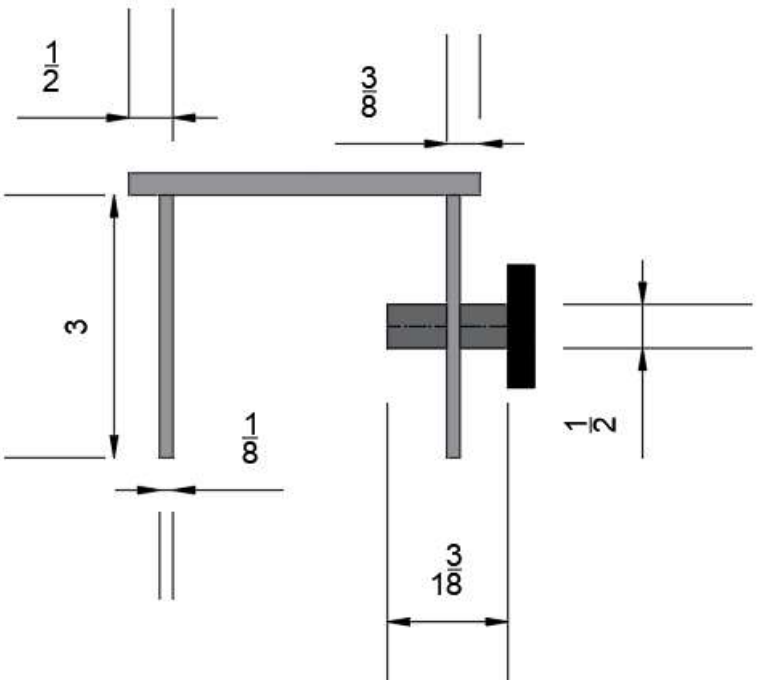

Figure 2. Front-View Schematic of Jig Design Including Dimensions

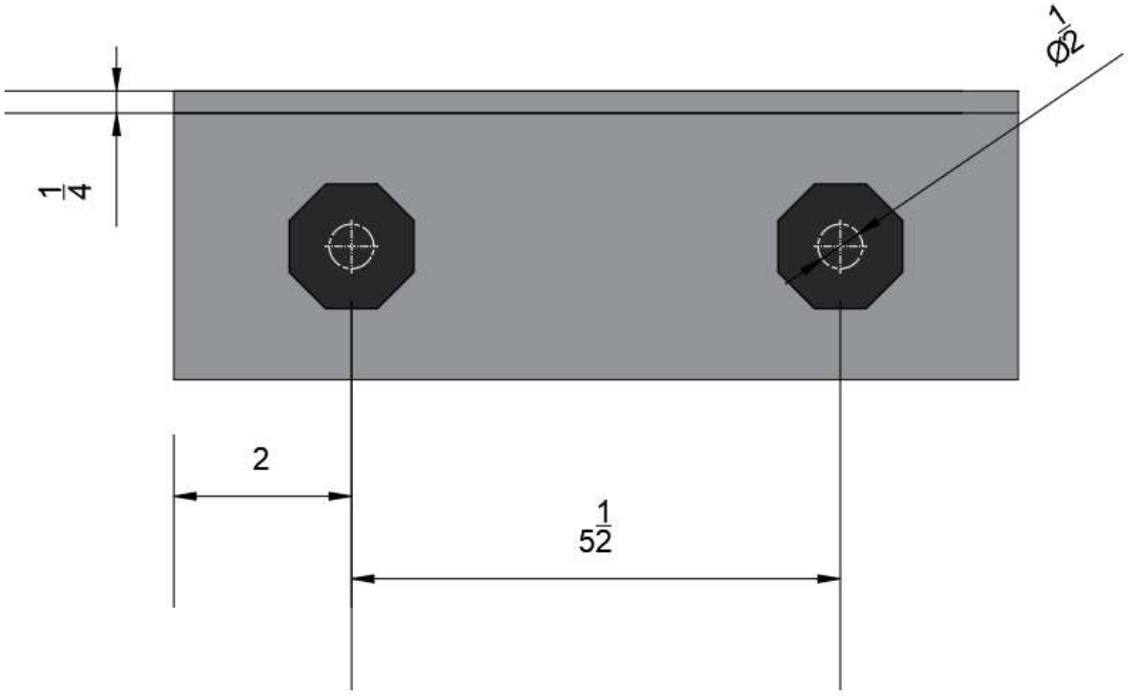

Figure x. Figure 3. Side-View Schematic of Jig Design Including Dimensions

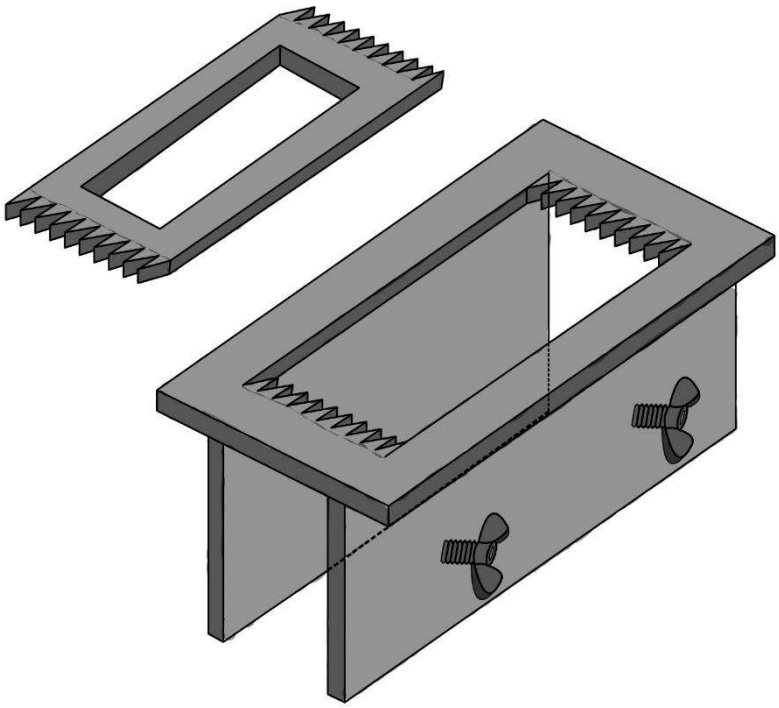

Figure 4. 3D Schematic Design of Jig

List of material and equipment

- 3D printer with PLA filament
- Screws
- Clamp nut
- Rubber end caps

Cost spreadsheet

Table 1. Cost Breakdown

Equipment	Description	Cost ($)
3D printer	Allows for initial prototype of jig	Cost to print: $7.5

Threaded Rod	Allows for movement of rubber end clamps in clamping of jig to door	Free (already acquired)
Clamp nut	Allows for rotation of threaded rod to clamp	$0.2 (2 Needed)
Rubber end caps	Allows for distribution of force when clamping to prevent breakage	$0.5 (2 Needed)

Table 2. Prototyping Test Plan

Test ID	Test Objective (Why)	Description of Prototype used and of Basic Test Method (What)	Description of Results to be Recorded and how these results will be used (How)	Estimated Test duration and planned start date (When)
1	Test setup time of the prototype. The test will allow the team to: -Learn what the approximate setup time would be for the current design. -Determine whether improvements need to be made to the product's efficiency. -Communicate the efficiency of the design with the client in order to receive feedback. This test is designed to act as a reference point to compare the	Prototype #1 is a comprehensive, physical prototype designed to be a basic proof of concept. The prototype with be 3D printed model of the design. In the test one team member will set up the jig in a fashion similar to how a user would operate the jig. Another team member will time the process and record the results.	This test will measure the amount of time it takes to set up the jig. The times obtained during the test will be documented to inform future design decisions.	The testing process should not exceed 30 minutes. The results of the test are required by Sunday, March 3rd.

	efficiency of future prototypes			
2	Test the how the fastening system operates. The test will allow the team to learn about any unforeseen issues with operating the current design and/or the areas where the design needs improvement. This test is designed to check the functionality of the fastening system's design	In this test, one team member will fasten the jig onto a surface while another member records any observations.	All observations made during the testing will be recorded. The list of observations can be analyzed to make informed decisions about future prototypes.	The testing process should not exceed 30 minutes. The results of the test are required by Sunday, March 3rd.
3	Test the reliability of the fastening system. This test is designed to check the fastening system's ability to keep the jig secured to the door	To test the reliability of the fastening system of the door hinge, it will be tested on doors with different thicknesses and made of various materials to assess the adherence and strength of the screws.	All observations made during the testing will be recorded. The list of observations can be analyzed to make informed decisions about future prototypes.	The testing process should not exceed 30 minutes. The results of the test are required by Sunday, March 3rd.
4	Test the how the cutout plate operates. The test will allow the team to learn about any unforeseen issues with operating the current design and/or the areas where the design	In this test, one team member will place and remove the cutout plate in the different slots while another member records any observations.	All observations made during the testing will be recorded. The list of observations can be analyzed to make informed decisions about future prototypes.	The testing process should not exceed 30 minutes. The results of the test are required by Sunday, March 3rd.

	needs improvement. This test is designed to check the functionality of adjusting the cutout plate.			
5	Test the stability of the cutout plate. This test is designed to check the cutout plate's ability remain in place.	To test the stability of the cutout plate, a team member will the shake the jig while it is fastened to a surface. Another member will record their observations.	All observations made during the testing will be recorded. The list of observations can be analyzed to make informed decisions about future prototypes.	The testing process should not exceed 30 minutes. The results of the test are required by Sunday, March 3rd.

Table 3. Project Task Plan

Task ID	Task Description	Estimated Duration (Days)	Owner
1	Create digital 3D model of design	1	Nick
2	3D print prototype #1 (proof of concept)	2	Maysam & Kim
3	test prototype (following the prototype test plan)	1	All
4	Record observations and results for each test	1	Kim
5	Determine the design and objective for prototype #2	1	All
6	Update target specifications, detailed design, and/or BOM (if applicable)	1	Maysam
7	Create an outline for prototyping test plan for prototype #2	2	Charlie
8	Prepare information from deliverable F to receive feedback for client	1	Maysam
9	Document client feedback	1	Kim
10	Obtain materials for prototype #2 and testing	2	Charlie
11	Create prototype #2 (critical subsystem)	4	Charlie

12	Create analytical model of the prototype	3	Nick
13	Test prototype (following the prototype test plan)	1	All
14	Record observations and results for each test	1	Maysam
15	Get feedback on the prototype from other potential users	1	Kim
16	Determine the design for prototype #3	1	All
17	Update target specifications, detailed design, and/or BOM (if applicable)	1	Nick
18	Create an outline for prototyping test plan for prototype #3	2	Kim
19	Obtain materials for prototype #3 and testing	2	Nick
20	Create prototype #3 (final version)	5	Nick & Maysam
21	Test prototype (following the prototype test plan)	1	All
22	Record observations and results for each test	1	Charlie
23	Get feedback on the prototype from other potential users	1	Charlie
24	Update target specifications, detailed design, and/or BOM (if applicable)	1	Kim

Table 4. Project Risks

Project Risk	Contingency Plan
Team members not completing tasks on time	Increased estimated task duration to account for tasks taking longer than expected
Issues relating to the construction of the prototype	Start building prototype at the beginning of the week to give enough time to address any possible issue
Issues with adjusting the backset	Switch to a design that uses multiple plates with the various backsets