



**The Tech  
Challenge**

**cosmic**

**2024**

**QUEST**

★ Presented by  
Amazon

# Test Rig and Safety Area Specifications

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Final Design • October 20, 2023

**Target #3 "The Rocky Slope"**

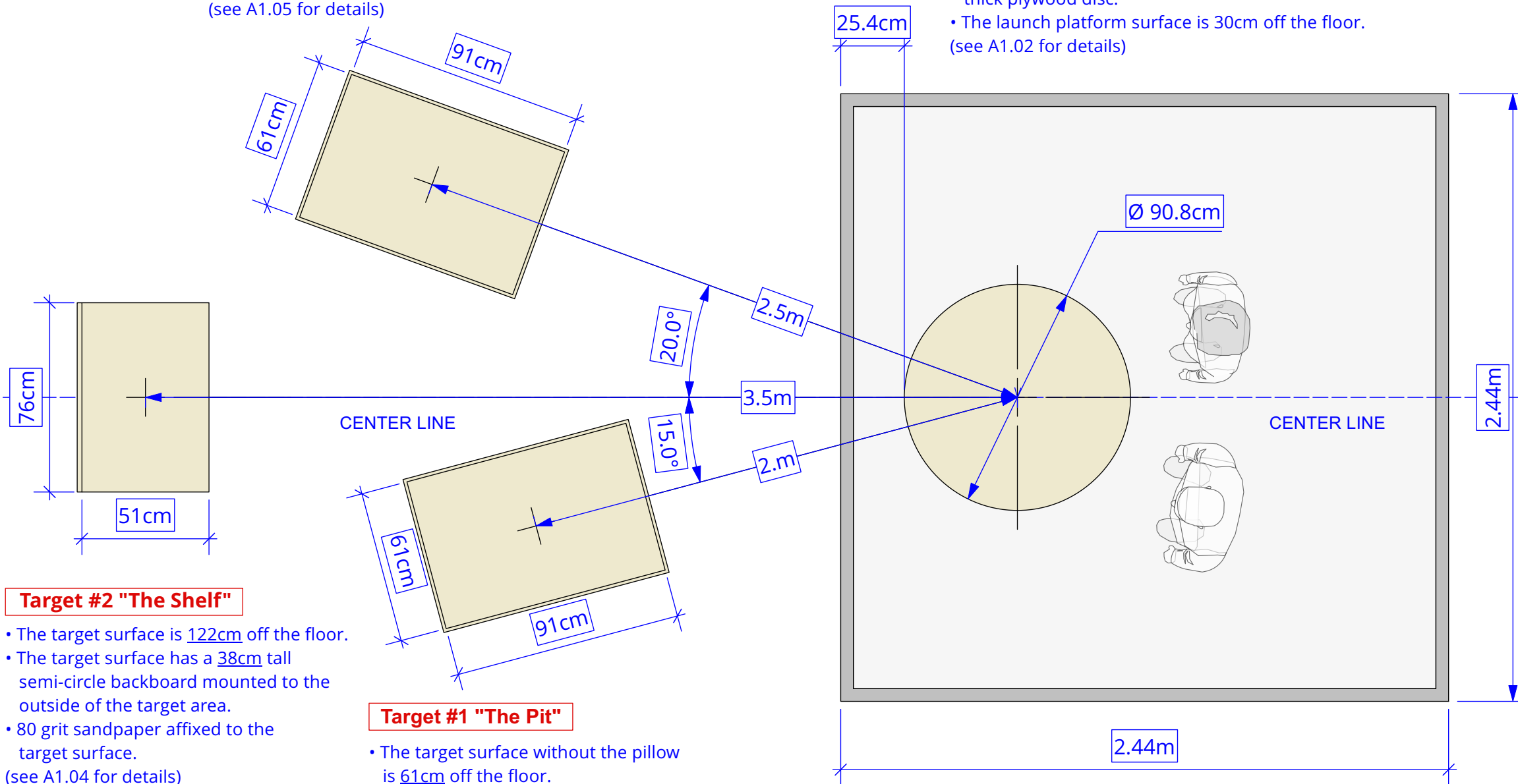
- The target surface is at a 10° angle with loose lava rocks.
- The front edge of the target surface without the lava rocks is 91cm off the floor.
- The target surface has a 1.3cm edge lip mounted to the perimeter of the target area. (see A1.05 for details)

**Launch Platform and Launch Area**

- The launch platform surface is a 90.8cm diameter x 1.9cm thick plywood disc.
- The launch platform surface is 30cm off the floor. (see A1.02 for details)

NOTES:

- The test rig is comprised of a launch area, launch platform, and (3) different target surfaces.
- The launch area is an 2.44m x 2.44m square with the launch platform centered and 25.4cm back from the front edge.
- The launch platform surface is a 90.8cm x 1.9cm diameter plywood disc that is elevated 30cm off the floor.
- Critical dimensions are in blue.
- Tolerance: + plus or - minus .6cm.
- See (A1.06) for support ideas.

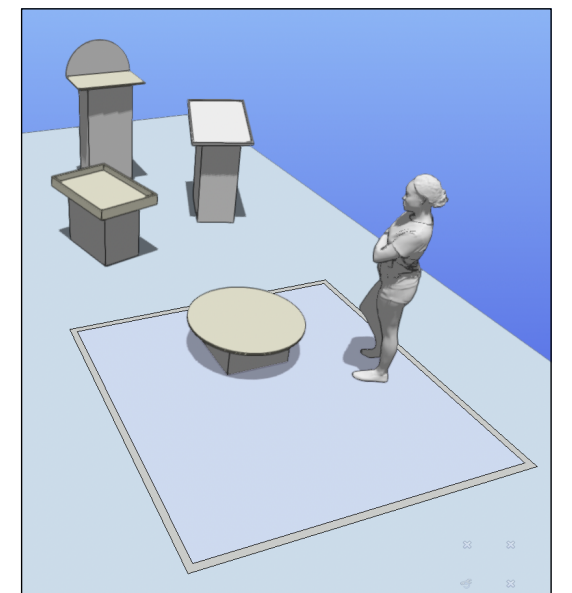


**Target #2 "The Shelf"**

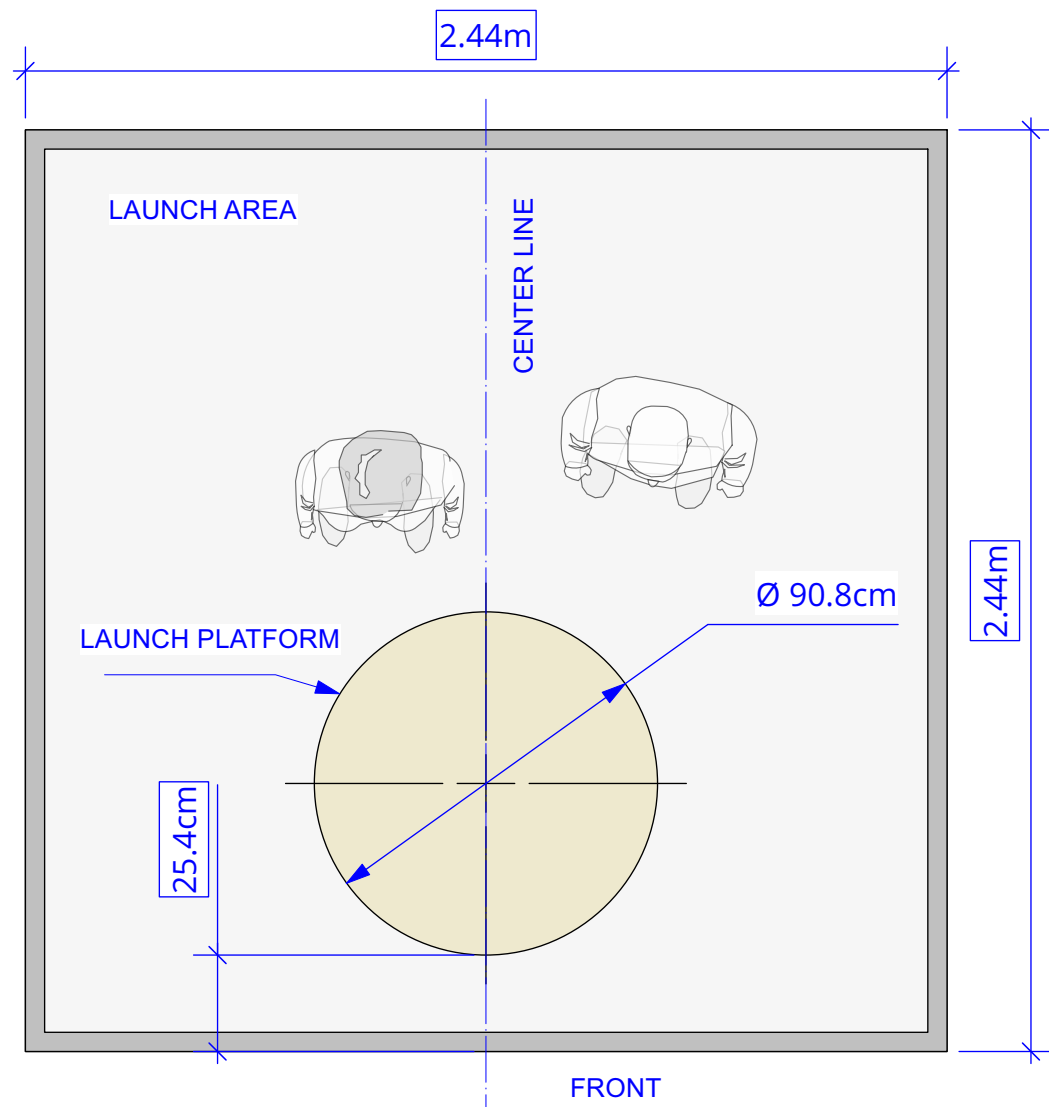
- The target surface is 122cm off the floor.
- The target surface has a 38cm tall semi-circle backboard mounted to the outside of the target area.
- 80 grit sandpaper affixed to the target surface. (see A1.04 for details)

**Target #1 "The Pit"**

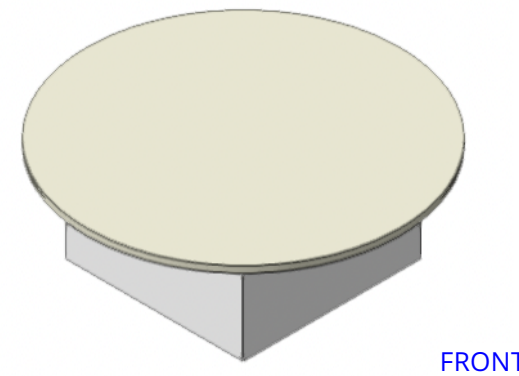
- The target surface without the pillow is 61cm off the floor.
- The target surface has a 8.3cm edge lip mounted to the perimeter of the target area. (see A1.03 for details)



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Drawing Number <b>A1.01</b>	Drawn By project team	Date 10.20.23	
CAD File Name Test Rig Specifications Plan View			



- The launch platform surface is a 90.8cm diameter x 1.9cm thick plywood disc.
- The launch platform surface is 30cm off the floor.



**NOTES:**

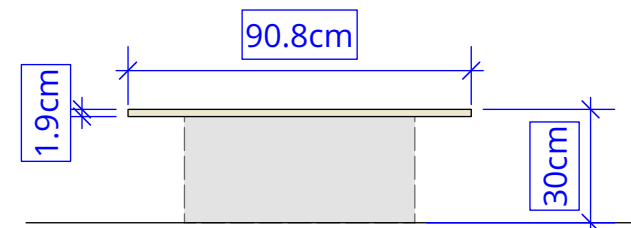
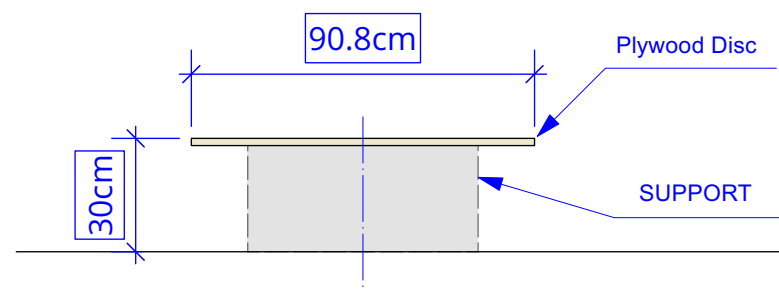
- The launch platform surface is a 90.8cm x 1.9cm diameter plywood disc that is elevated 30cm off the floor.
- It may be substituted with a disc (round) from OSH or Lowes Hardware stores.
- Tolerance: plus or minus .6cm.
- See (A1.06) for details.

Launch Platform and Launch Area Plan View

Scale: 1:20

Launch Platform Isometric View

Scale: NTS

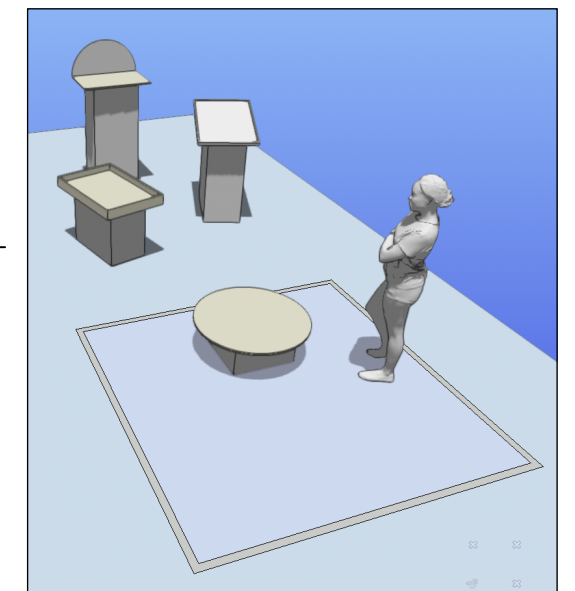


Launch Platform Front View

Scale: 1:20

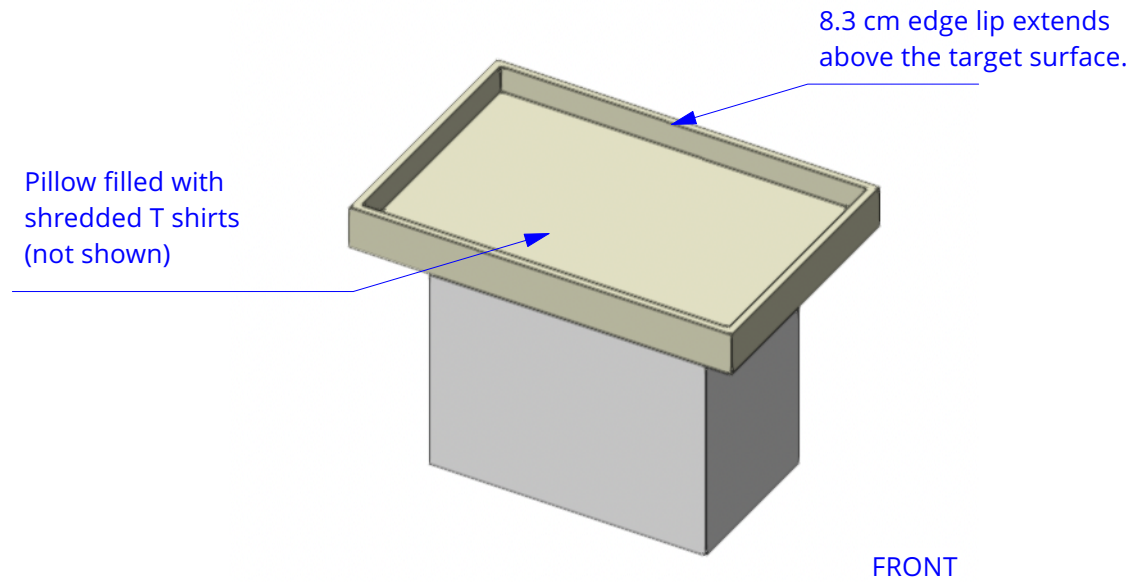
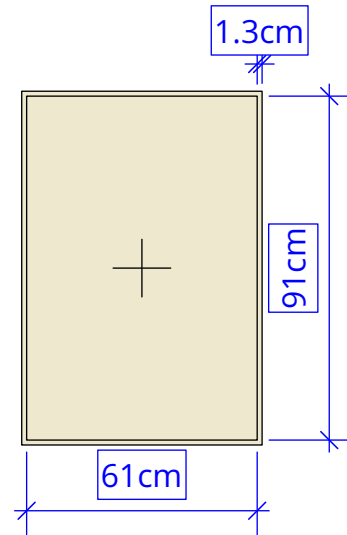
Launch Platform Side View

Scale: 1:20



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Drawing Number <b>A1.02</b>	Drawn By project team	Date 10.20.23	
CAD File Name Launch Platform and Launch Area			

- The target surface without the pillow is 61cm off the floor.
- The target surface has a 8.3cm edge lip mounted to the perimeter of the target area.



NOTES:

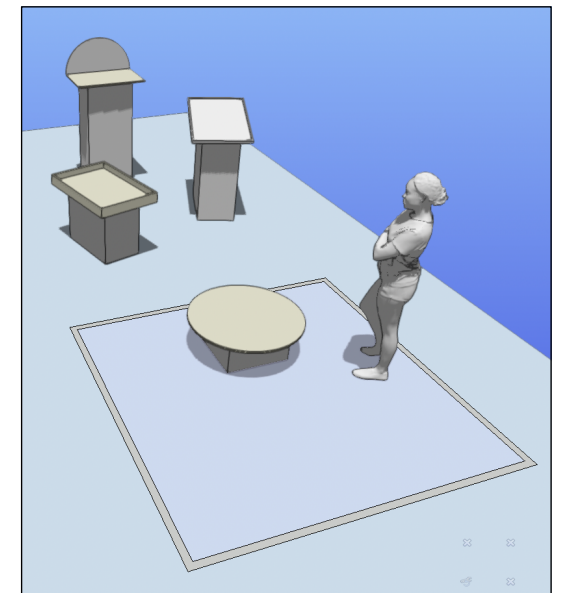
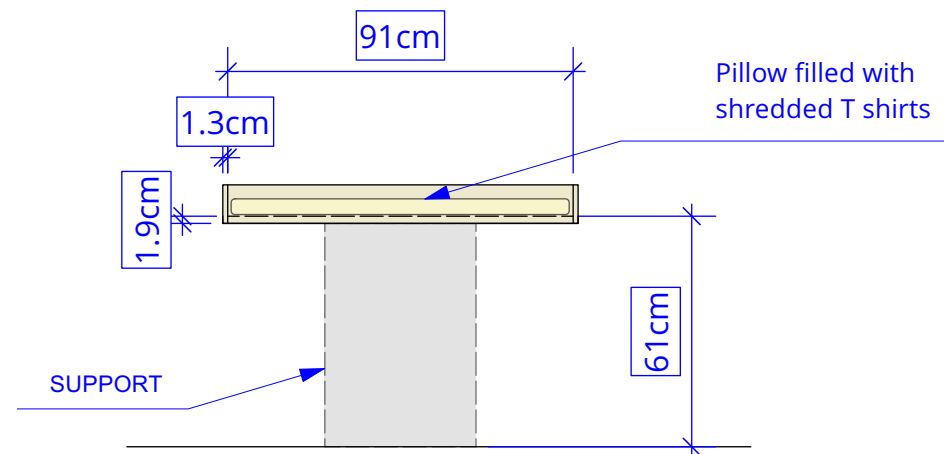
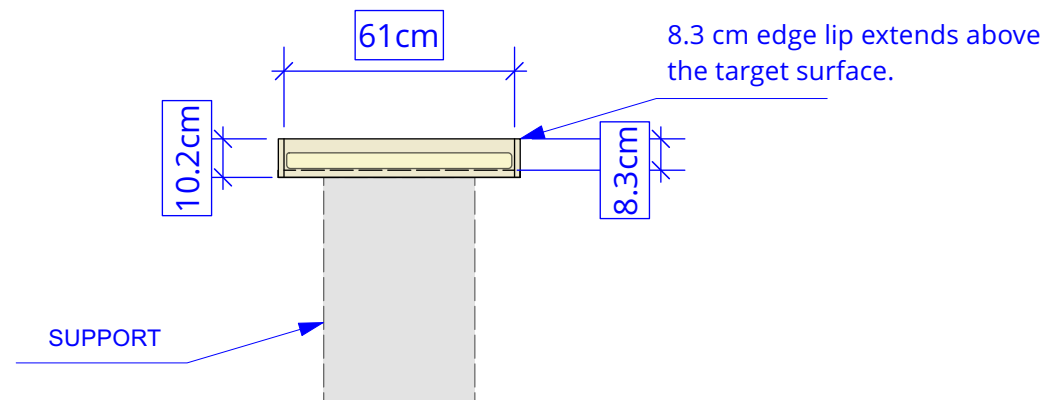
- The target surface without the pillow is 61cm off the floor.
- The target surface has a 8.3cm edge lip mounted to the perimeter of the target surface.
- Tolerance: plus or minus .6cm.
- See (A1.06) for support ideas.

Target #1 "The Pit" Plan View

Scale: 1:20

Target #1 "The Pit" Isometric View

Scale: NTS



Target #1 "The Pit" Front View

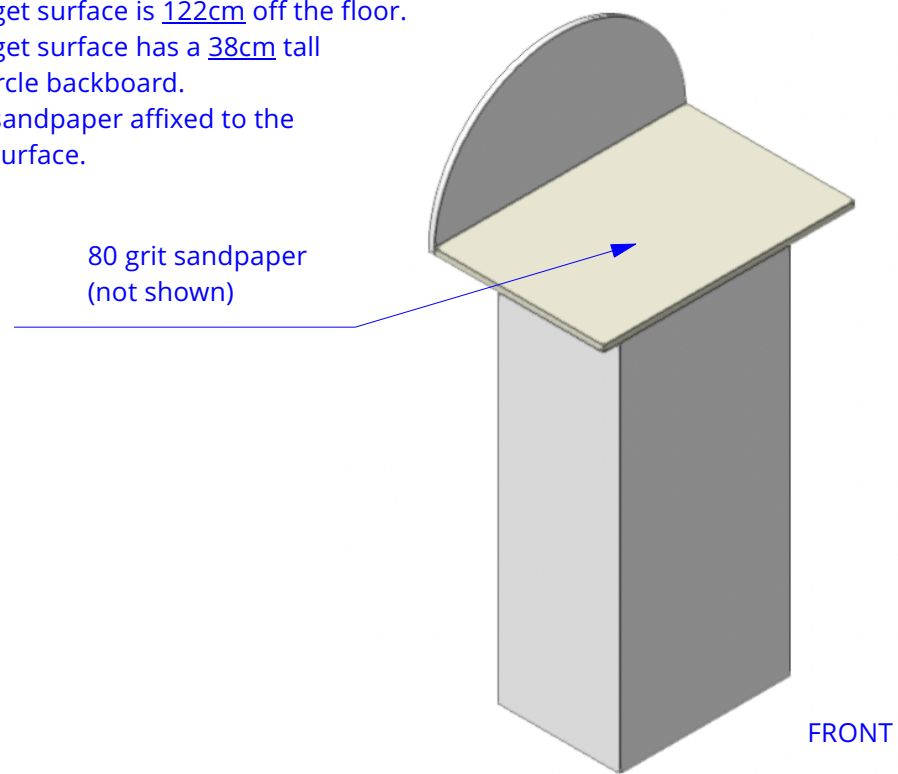
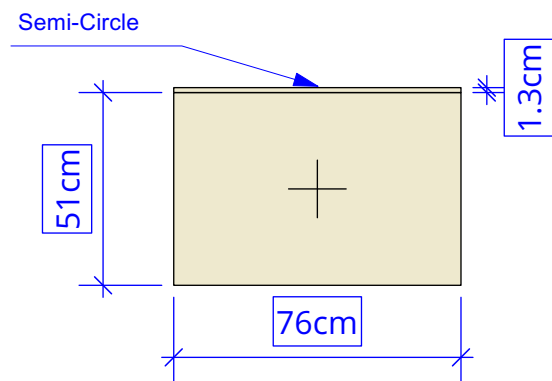
Scale: 1:20

Target #1 "The Pit" Side View

Scale: 1:20

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Drawing Number <b>A1.03</b>	Drawn By project team	Date 10.20.23	
CAD File Name Target Surface #1 "The Pit"			

- The target surface is 122cm off the floor.
- The target surface has a 38cm tall semi-circle backboard.
- 80 grit sandpaper affixed to the target surface.



NOTES:

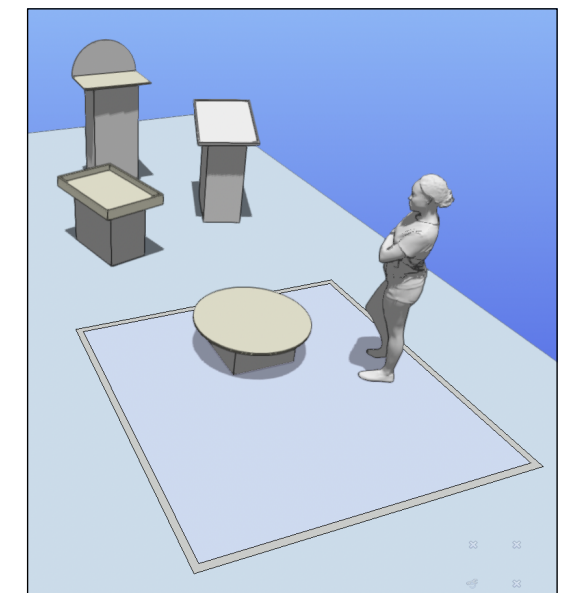
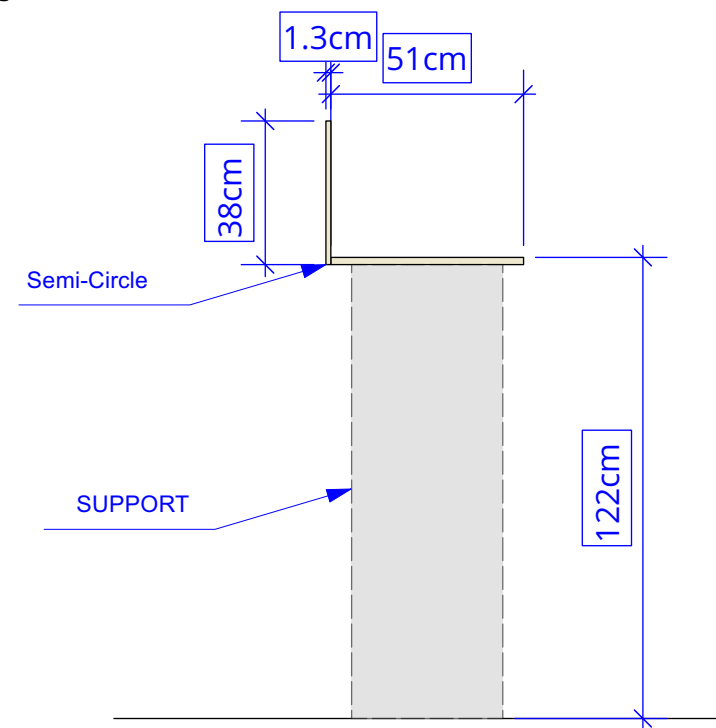
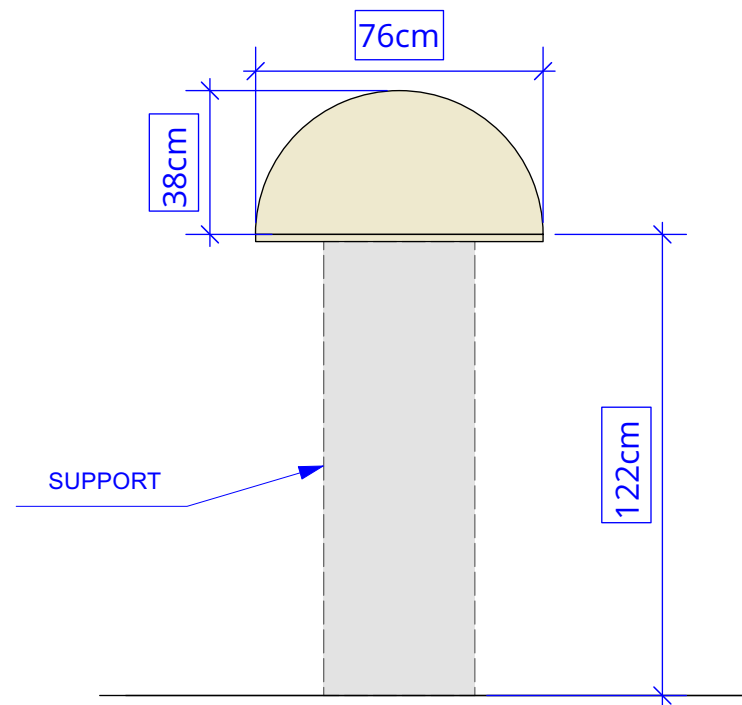
- The target surface is 122cm off the floor.
- The target surface has a 38cm tall semi-circle backboard.
- 80 grit sandpaper affixed to target surface.
- Tolerance: plus or minus .6cm.
- See (A1.06) for support ideas.

Target #2 "The Shelf" Plan View

Scale: 1:20

Target #2 "The Shelf" Isometric View

Scale: NTS



Target #2 "The Shelf" Front View

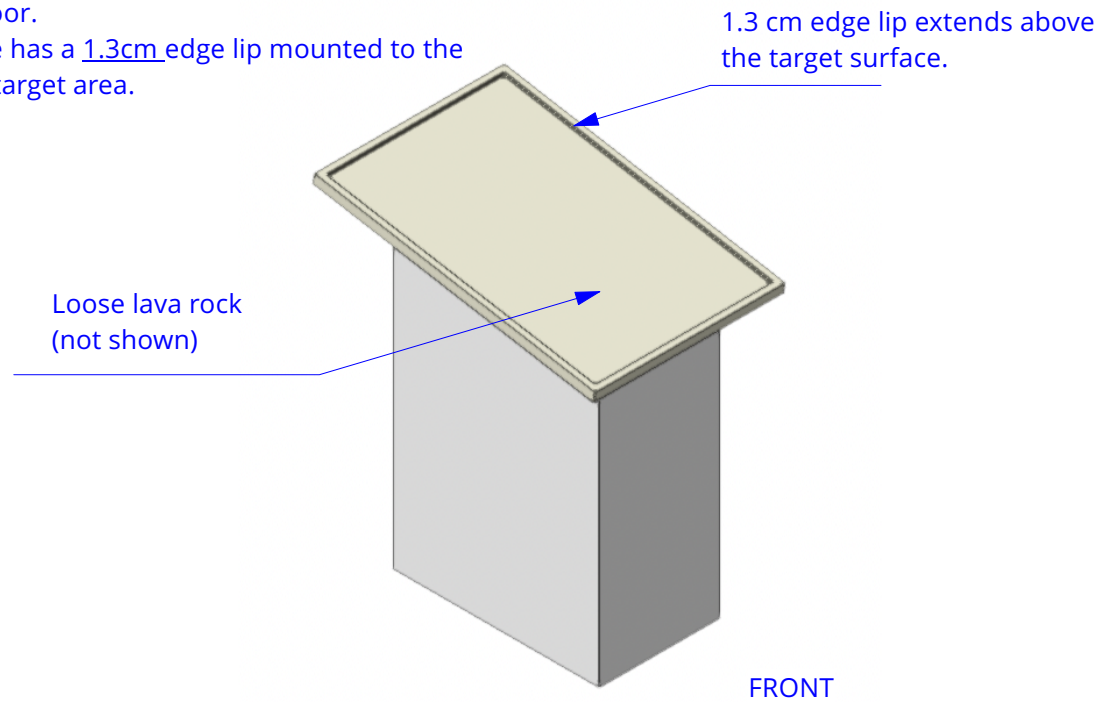
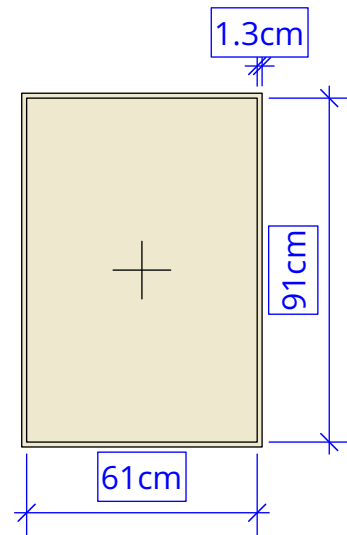
Scale: 1:20

Target #2 "The Shelf" Side View

Scale: 1:20

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A1.04	project team	10.20.23			
CAD File Name		Target Surface #2 "The Shelf"			

- The target surface is at a 10° angle with loose lava rocks.
- The front edge of the target surface without the lava rocks is 91cm off the floor.
- The target surface has a 1.3cm edge lip mounted to the perimeter of the target area.



NOTES:

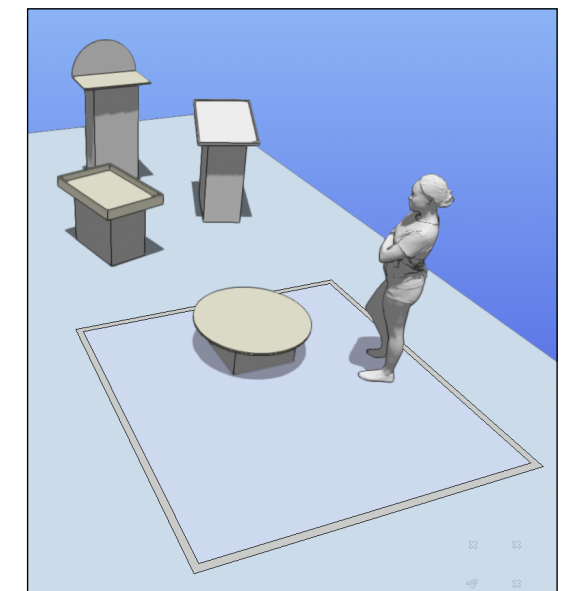
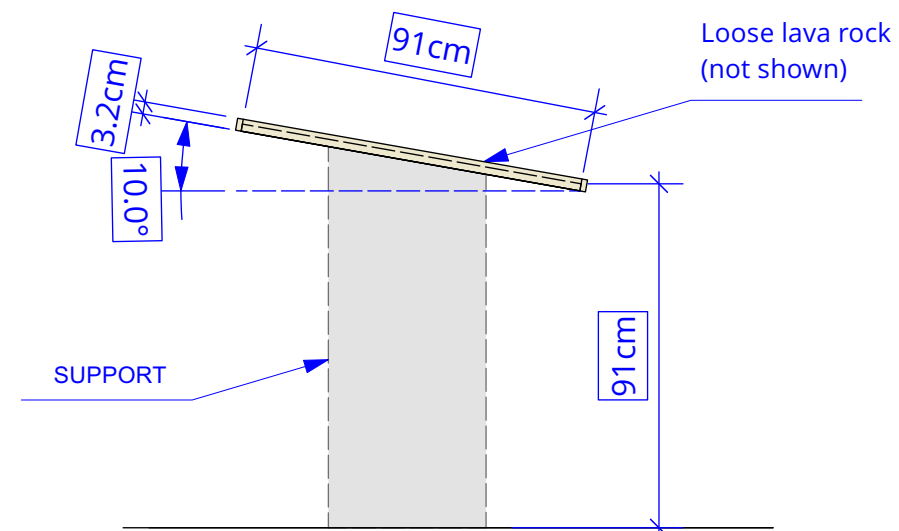
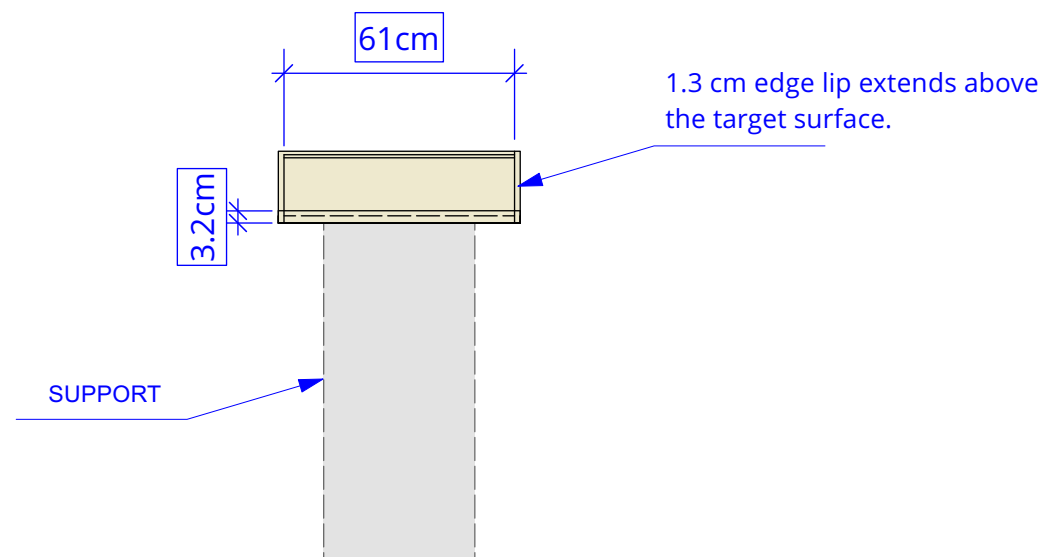
- The target surface is at a 10° angle with loose lava rocks.
- The front edge of the target surface without the lava rocks is 91cm off the floor.
- The target surface has a 1.3cm edge lip mounted to the perimeter of the target surface.
- Tolerance: plus or minus .6cm.
- See (A1.06) for support ideas.

Target #2 "The Rocky Slope" Plan View

Scale: 1:20

Target #2 "The Rocky Slope" Isometric View

Scale: NTS



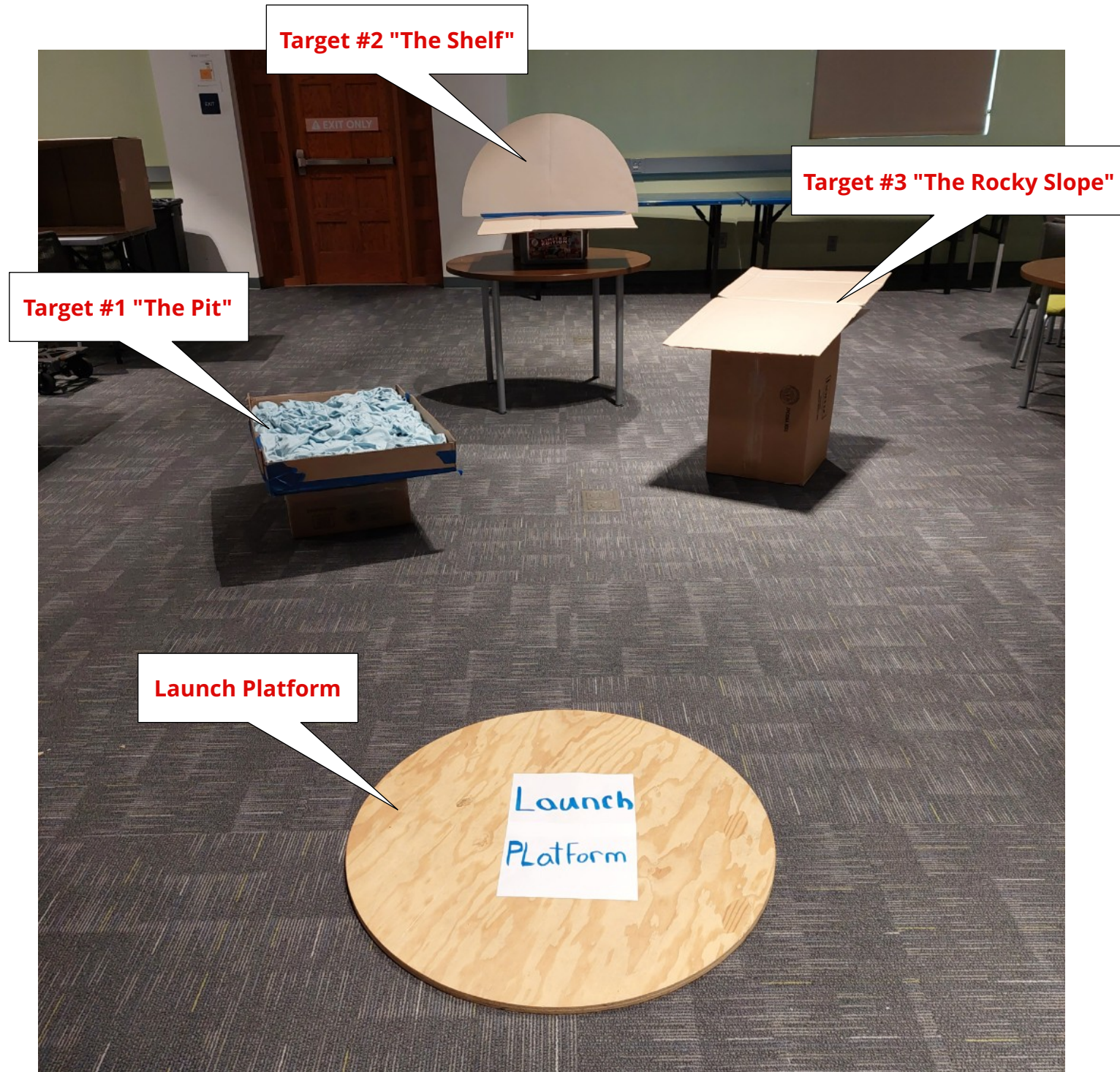
Target #2 "The Rocky Slope" Front View

Scale: 1:20

Target #2 "The Rocky Slope" Side View

Scale: 1:20

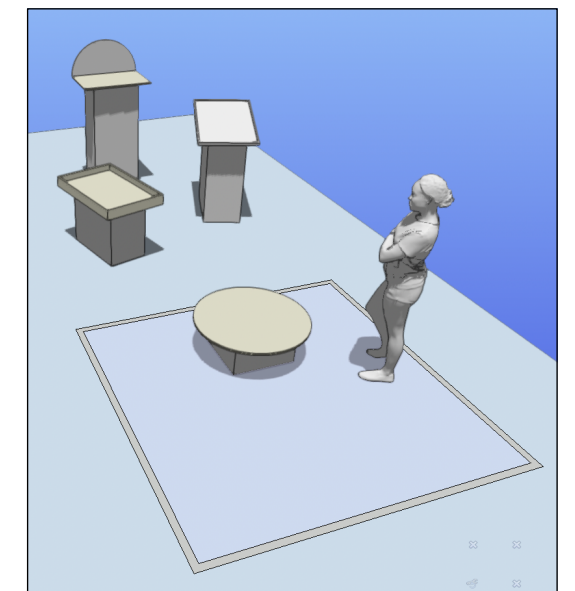
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Drawing Number <b>A1.05</b>	Drawn By project team	Date 10.20.23	All of the concepts, designs, and plans represented by this document are the property of TTI and are for use on the project specified in this document. No concepts, designs, or plans shall be used by any person, firm, or corporation for any purpose without the prior written permission of TTI.
CAD File Name Target Surface #3 "The Rocky Slope"			



Chairs, stools, and boxes are possible vertical support items when measuring out the test rig.

NOTES:

- The test rig is comprised of a launch area, launch platform, and (3) different target surfaces.
  - See (A1.02, A1.03, A1.04, and A1.05,) for details.
  - The launch area is an 2.44m x 2.44m square with the launch platform centered and 25.4cm back from the front edge.
  - The launch platform surface is a 90.8cm x 1.9cm diameter plywood disc that is elevated 30cm off the floor.
- See (A1.01) for details.
- Tolerance: + plus or - minus .6cm.



Test Rig "Home Built" Ideas

Scale: NTS

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Drawing Number <b>A1.06</b>	Drawn By project team	Date 10.20.23	
CAD File Name Test Rig "Home Build"			