



# Test Rig and Safety Area Specifications

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Final Design • October 29, 2022

- Wear eye protection at all times
- Read all warnings on label before use
- Critical dimensions are in blue
- Tolerance of all parts and dimensions need to be plus or minus 1/4"

**NOTES:**

Test table:  
3/4" x 48" x 96" plywood with a extended 36-1/2" x 36-1/2" x 51-1/2" triangle to support fan #2 at 45°. (see page .02 for elevation details) Table surface is 30" inches off the floor.

Raised Build Area:  
3" x 36" x 36" raised platform. Plywood construction. (see page .03 for details)

Raised Build Area Grid:  
4" x 4" box grid squares are located under 1/16" smooth acrylic. Mandatory fill cell in blue. (see page .03 for details) (see page .03 for details)

(2) 20" 3 Speed Industrial Fans:  
Maxx Air 20" 3 speed floor shroud fan. Fans are permanently affixed to the table surface and the fan shroud is permanently fixed at 90° to the table surface.

LINK:  
<https://www.homedepot.com/p/Maxx-Air-20-in-Floor-Shroud-Fan-H-VFF-20S-REDUPS/204409872>

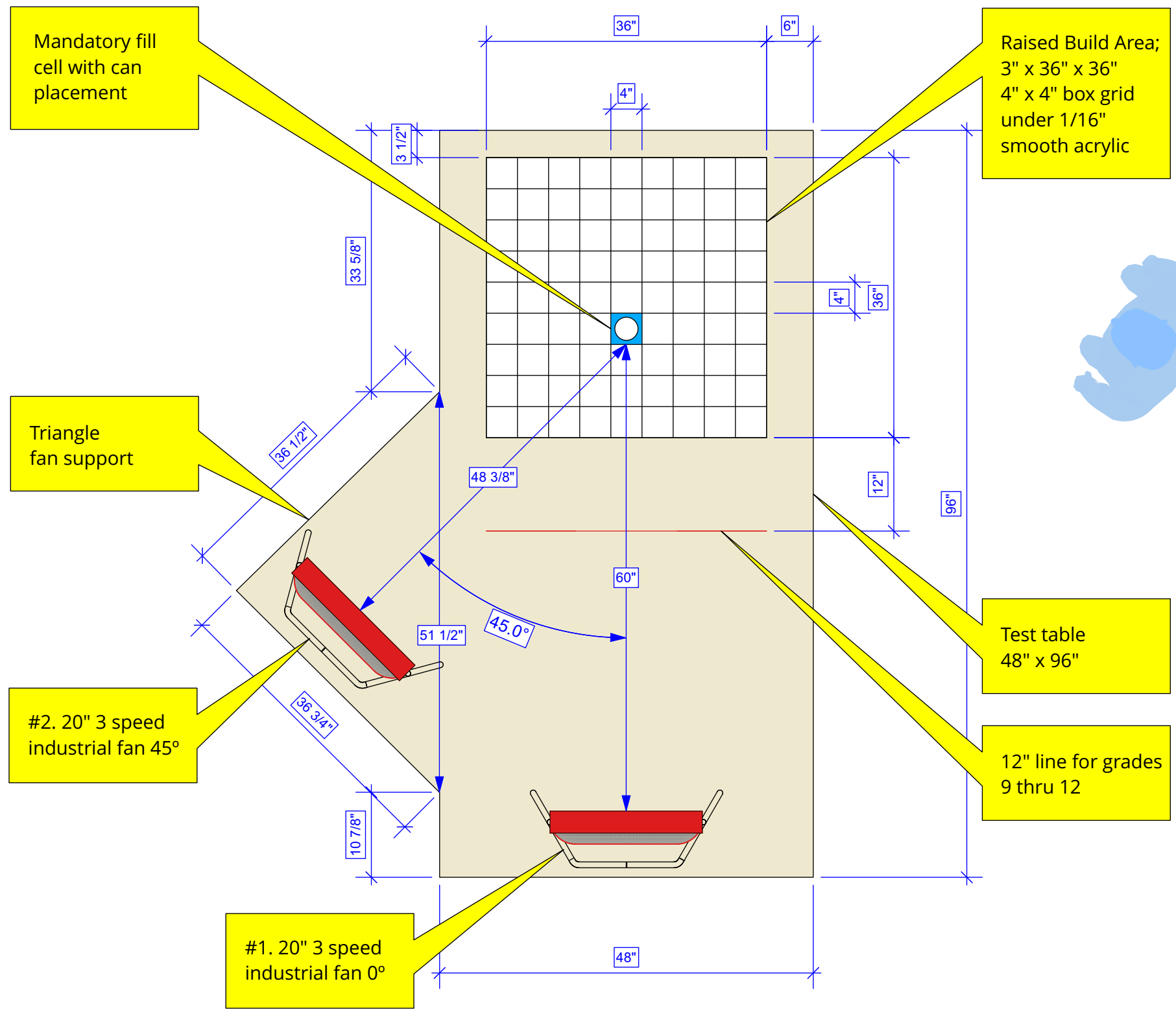
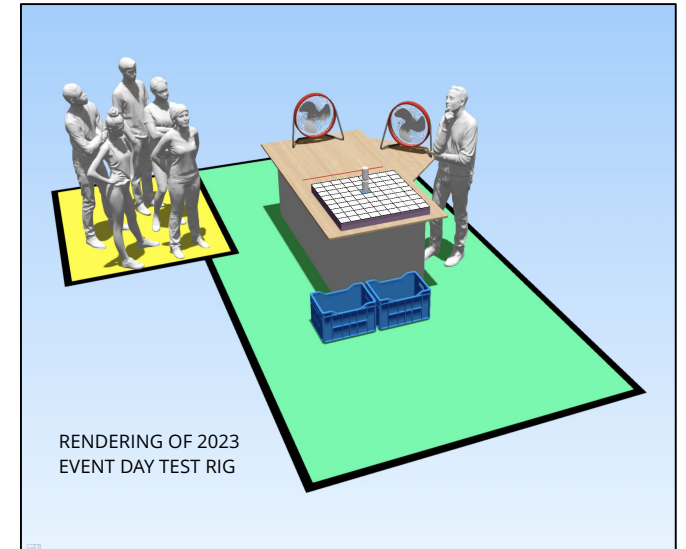
NOTE:  
Anemometer wind speed measurements were taken at the front of the blue square. (see plan view page .01)

4-8 grade build-area position: medium speed: 650 ft/min

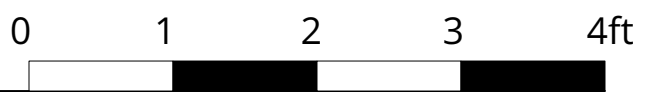
4-8 grade build-area position: high speed: 730 ft/min

High school build-area position: high speed: 765 ft/min

Note: all high school tests will be run with the fan on high speed.



(see Survive the Storm Rule Package for additional information)



The Tech Challenge 2023 Test Rig (ONLY) Plan View

SCALE: 3/4"=1'-0"

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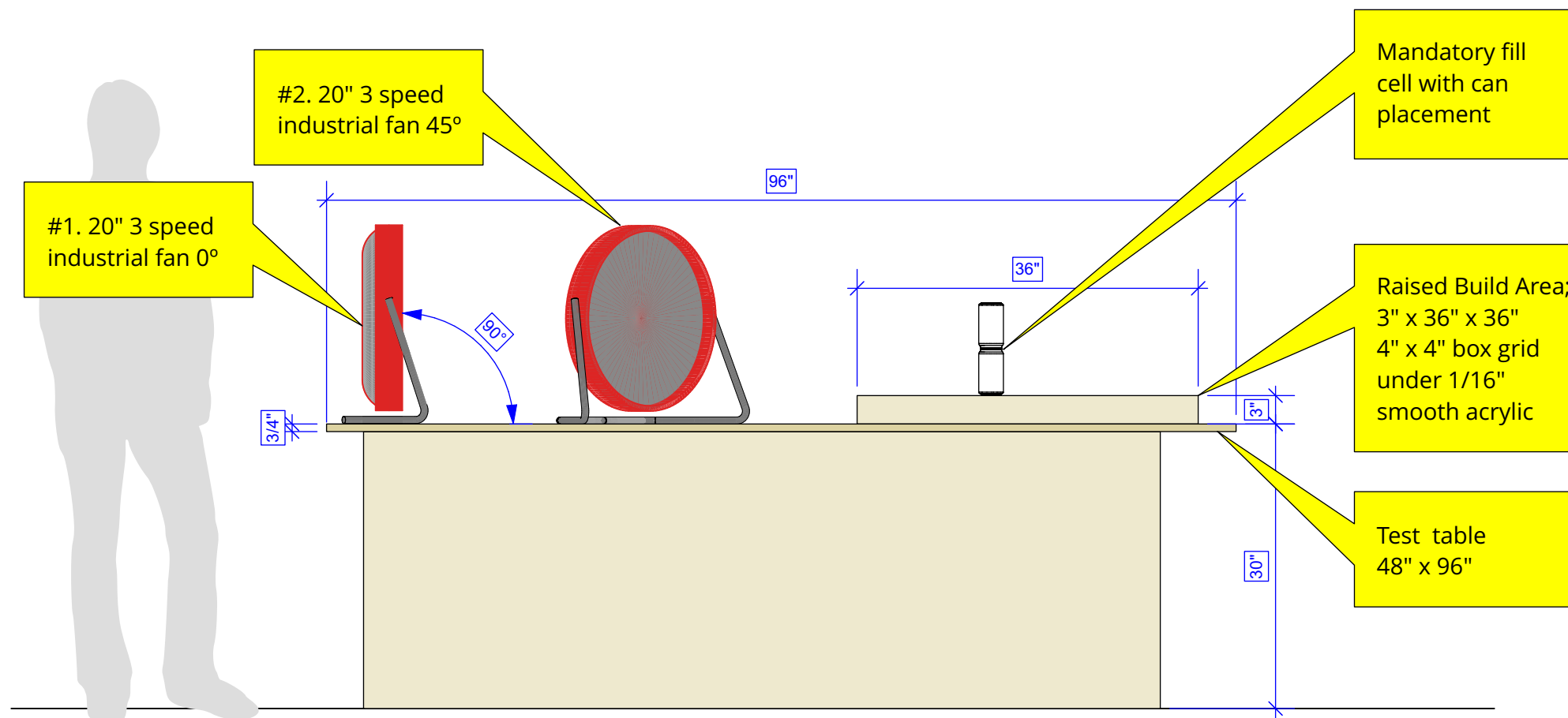
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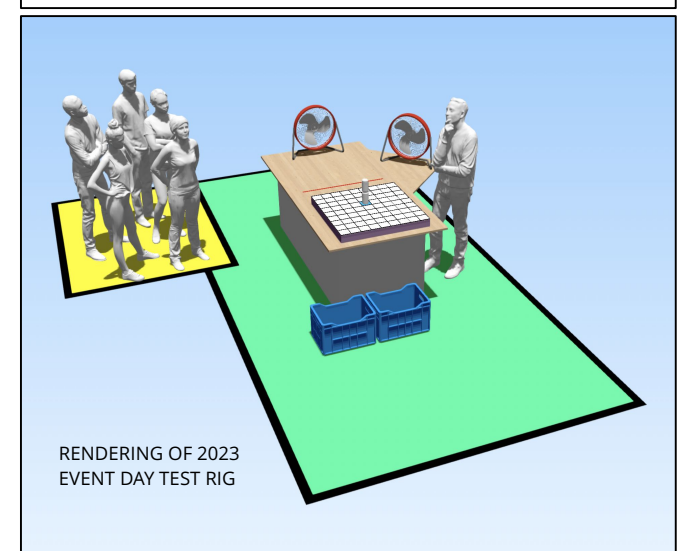
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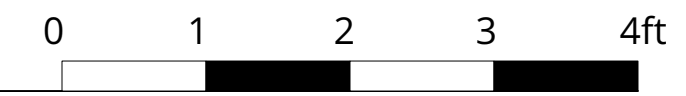


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The Tech Challenge 2023 Test Rig (ONLY) Elevation View

SCALE: 3/4"=1'-0"



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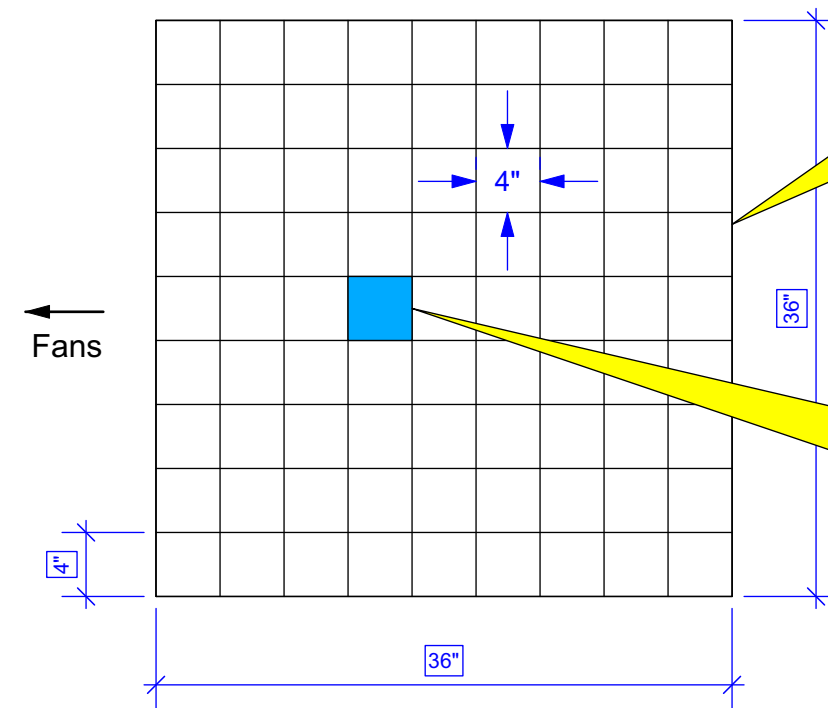
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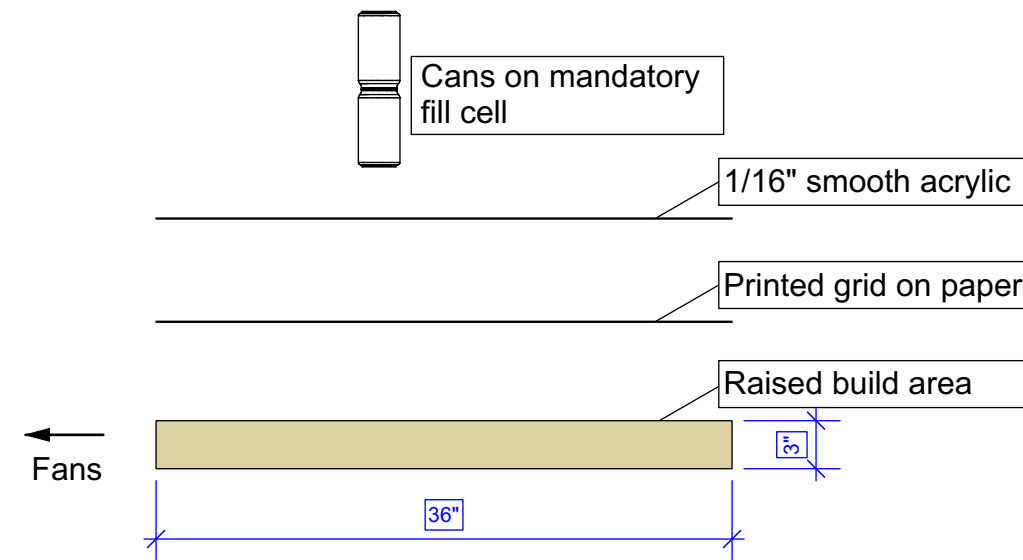
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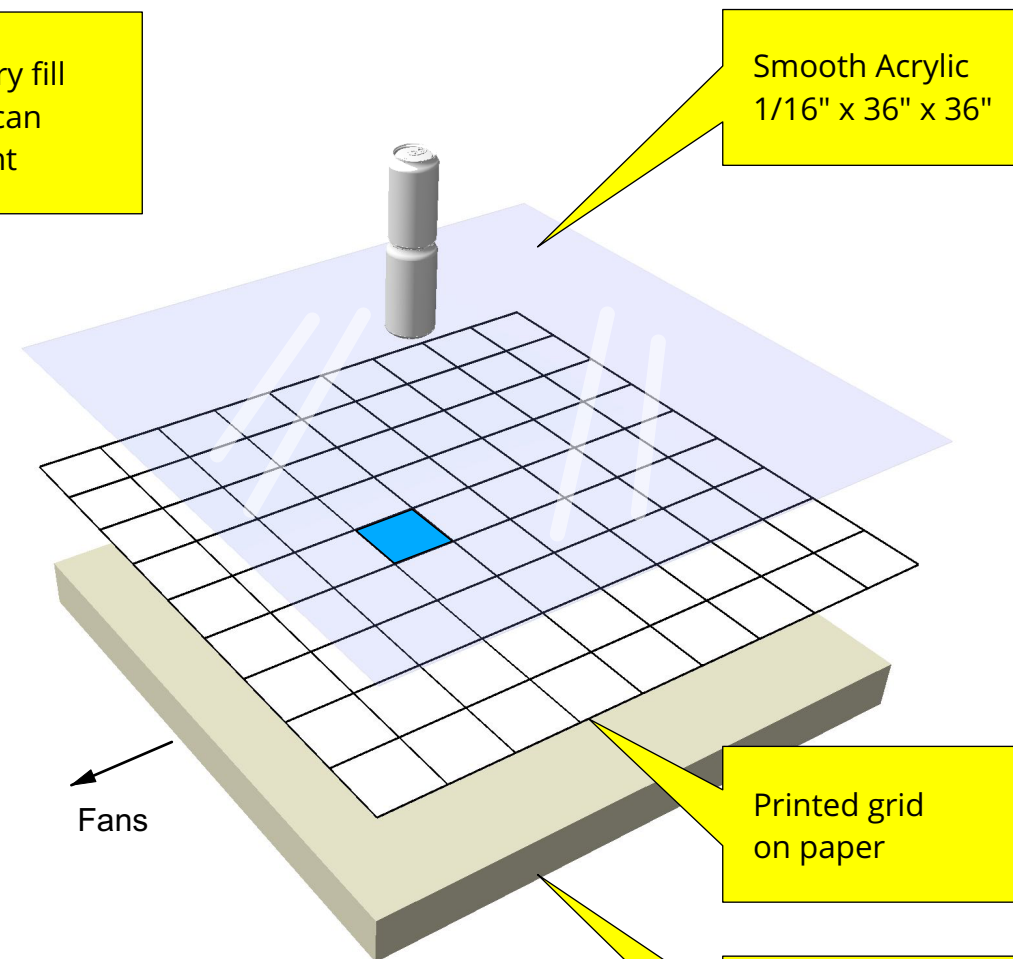
Note: all high school tests will be run with the fan on high speed.



Plan View

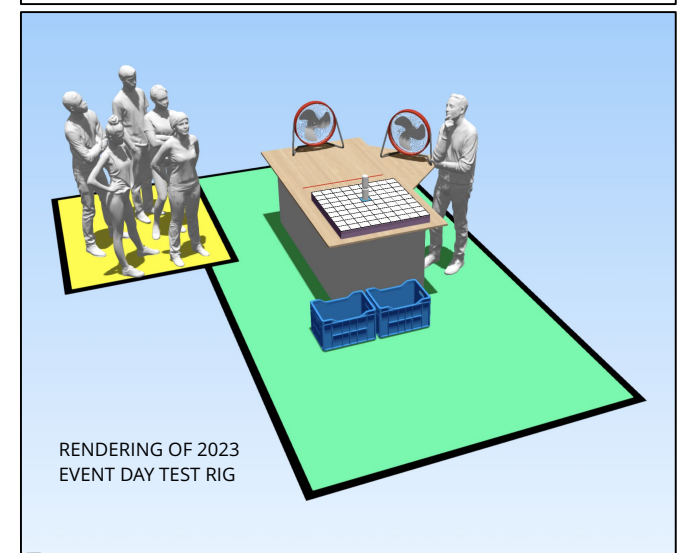


Side View



Perspective View

(see Survive the Storm Rule Package for additional information)

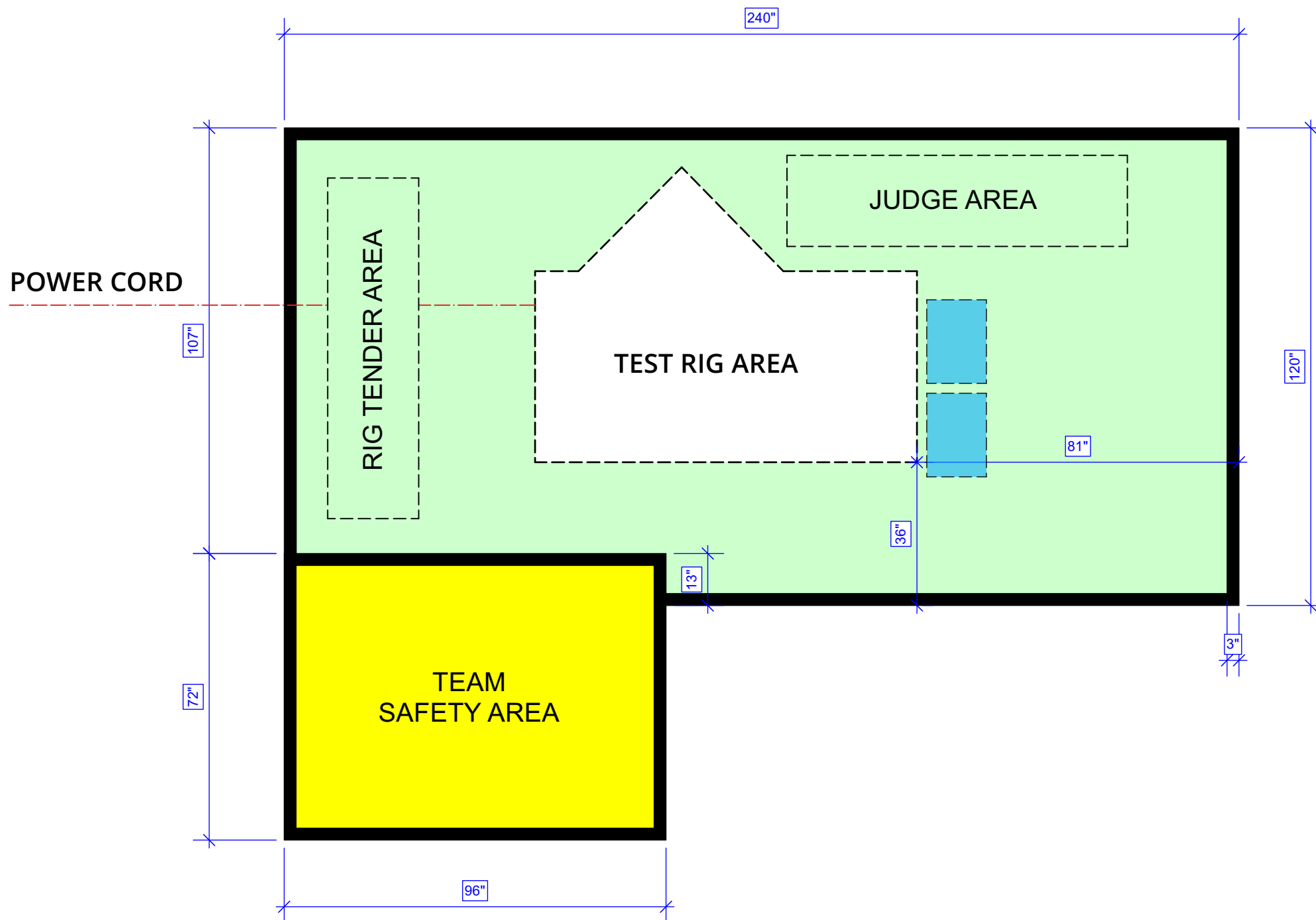


RENDERING OF 2023  
EVENT DAY TEST RIG

The Tech Challenge 2023 Raised Build Area Assorted Views

SCALE: 1"=1'-0"

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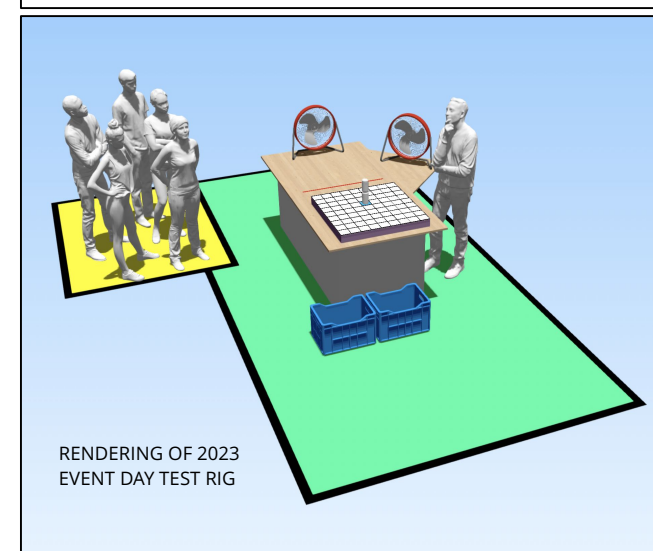
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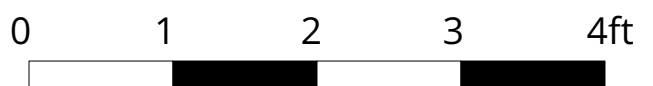
High school build-area position: high speed: 765 ft/min

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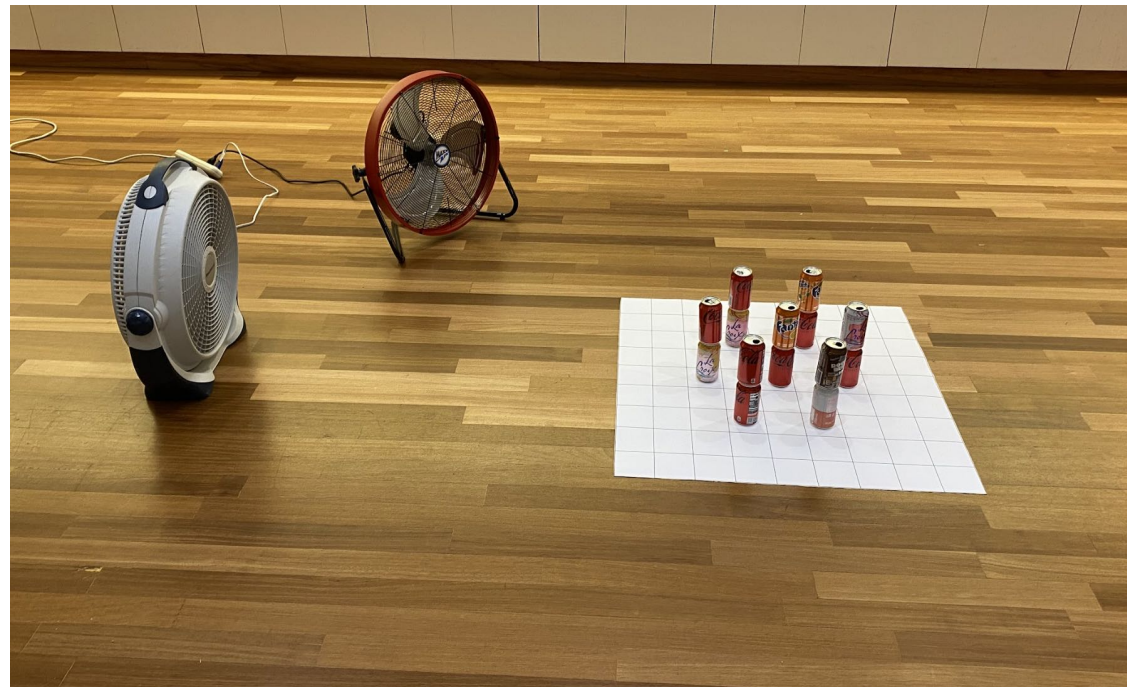
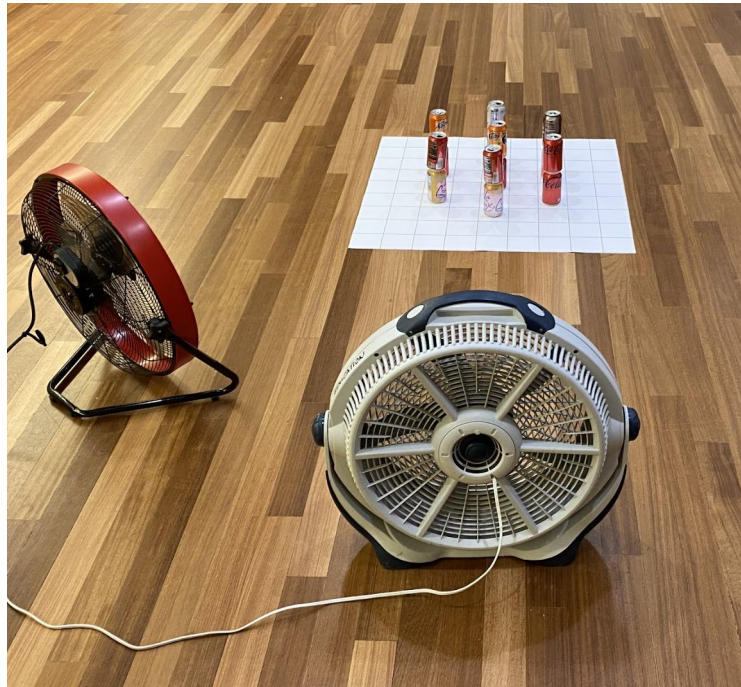


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The Tech Challenge 2023 Safety Area Plan View  
SCALE: 3/4"=1'-0"



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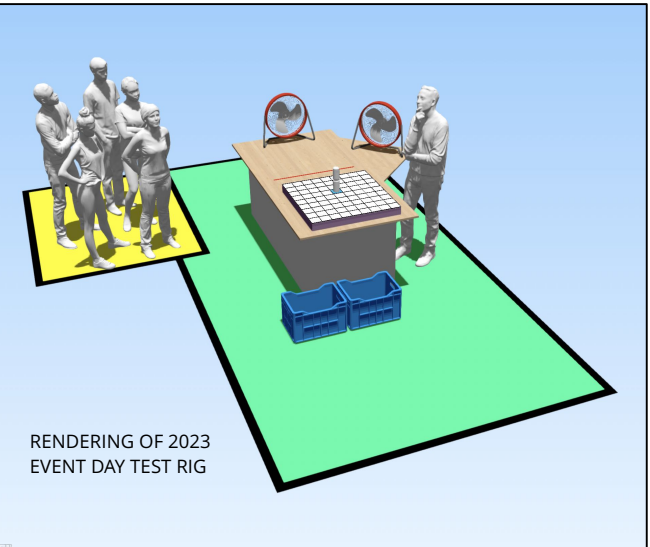
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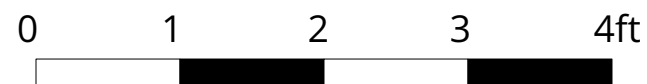
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RENDERING OF 2023  
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Sample of home built test area

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