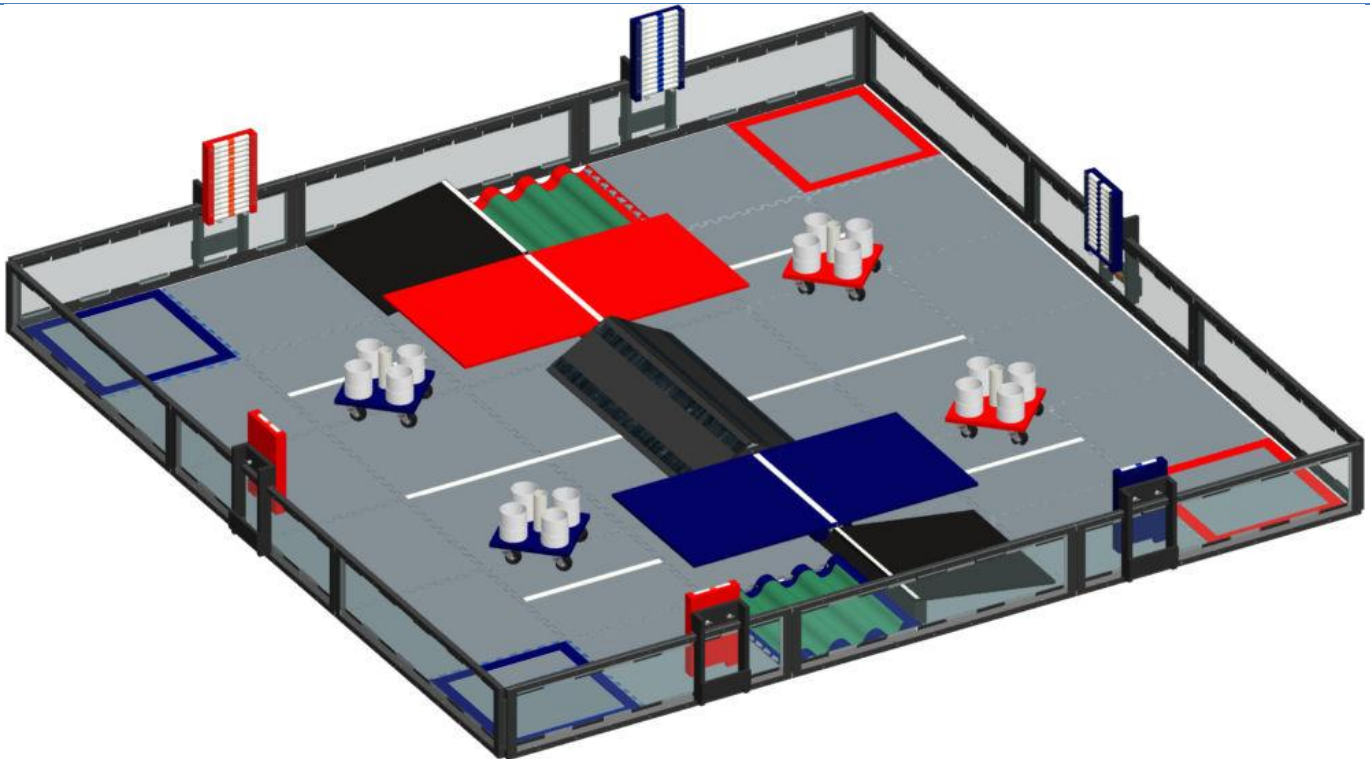




ZEN AND THE ART OF "GET OVER IT!" FIELD SETUP



Rev 1.1 9/1/2010

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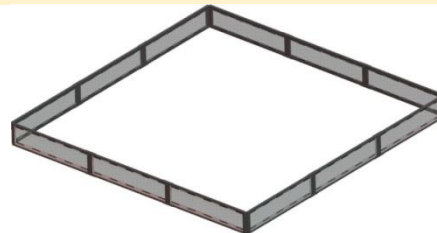
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SETTING UP THE PLAYING FIELD

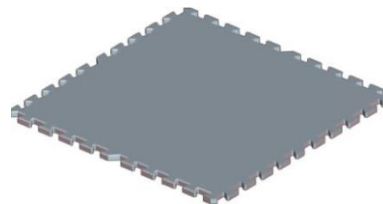
This document is meant to be used as a guide to setting up the game field for competition. It is assumed that the elements have already been built to the specifications given in the detailed drawings, and the Zen and the Art of Field Construction guide book.

ELEMENTS REQUIRED

Field Perimeter (X1)



Soft Tiles (X34)

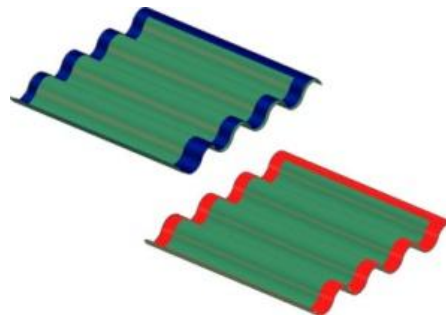


Gaffer's Tape:

- 2" Wide Red
- 2" Wide Blue
- 1" Wide White

Stationary Goals:

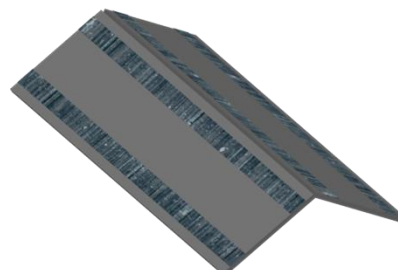
- 1 Red
- 1 Blue



Mountain/Bridge/Cliff supports (x2)

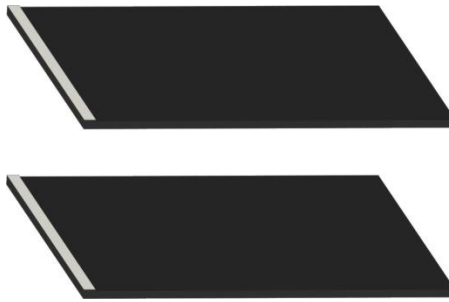


Mountain



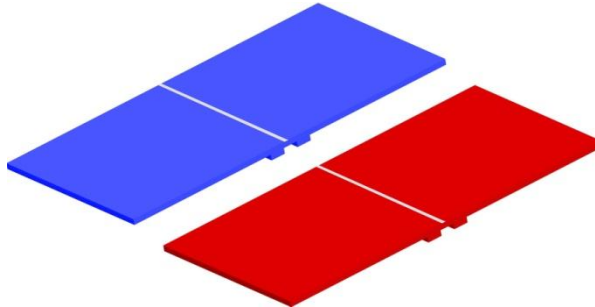
Zen and the Art of “Get Over It” Setup

Cliffs (x2)



Bridges (X2)

- 1 Red
- 1 Blue



Element Dispenser Supports (X6)



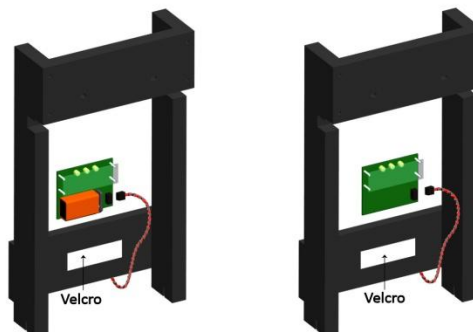
Element Dispensers (X6)

- 3 Red
- 3 Blue
- Hardware:
 - #10-32 2" Flat Head Machine Screw (x12)
 - #10-32 Wing Nut (x12)
 - #10-32 Washer



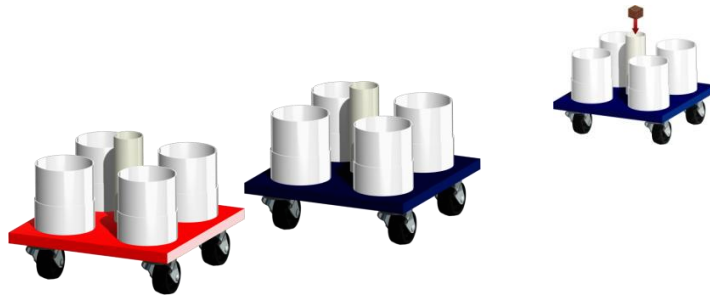
IR Beacons

- Master
- Slave
- Connecting Cable
- Velcro Tape



Rolling Goals (X4)

- 2 Red
- 2 Blue
- 4 Spacer blocks



Scoring Elements (Batons):

- All Red (Doubler) (x1)
- All Blue (Doubler) (x1)
- Regular Red (1 Stripe) (x44)
 - 2 with hidden magnets
- Regular Blue (1 Stripe) (x44)
 - 2 with hidden magnets
- Preload Red (2 Stripes) (x5)
- Preload Blue (2 Stripes)(x5)



Game Controllers (8)

4-Port Powered USB Hubs (2)

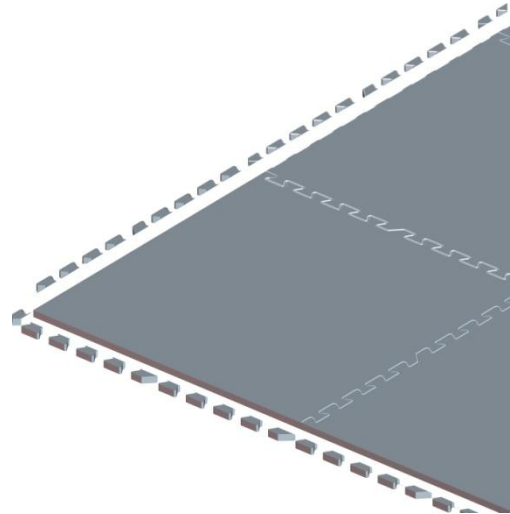
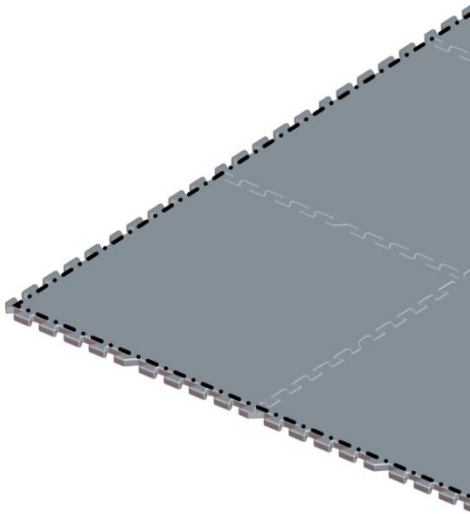
16' USB Cables (2)



SETTING UP THE FLOOR AND PERIMETER

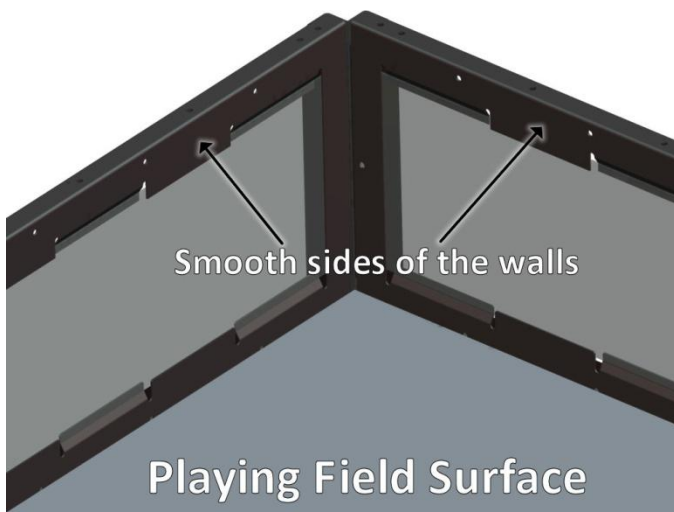
1. Lay the tiles with the smooth surface facing up.
2. **Critical Mandatory Step:** Trim all outer tabs from the Soft Tiles. The field perimeter *must* sit on the floor and not on the soft tiles in order for the dispensers to be at the proper height during game play.

Tip: Lay the tiles out and mark the outer edge to be cut. Use a sharp box cutter and a straight-edge, or If available, a band saw to get a smooth, clean edge.



3. Set up the field perimeter with the ‘smooth’ side of the walls toward the inside of the playing field as shown:

Inside View



Outside View



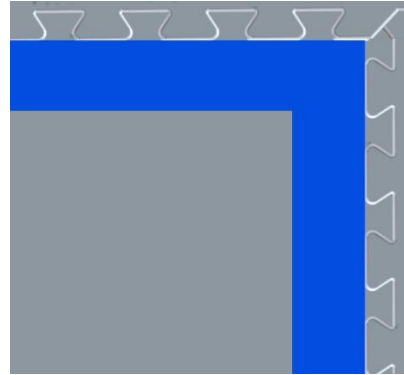
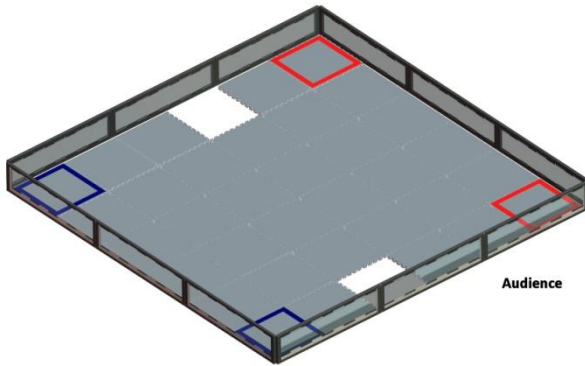
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4. Taping the playing field:

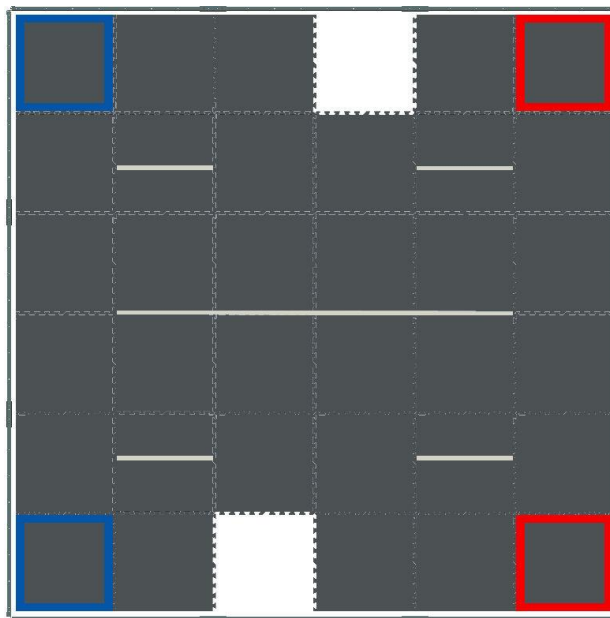
- A. Tape the Alliance Starting Boxes in the corners using 2” red and blue gaffer’s tape as shown:

Note: The red alliance boxes shall always be placed on the right as viewed by the audience.

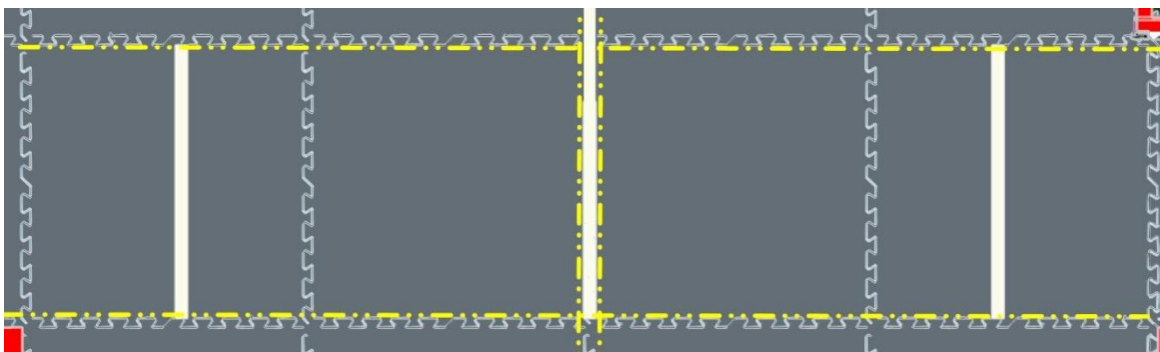
- B. Ensure the tape is placed against the edge of the tile tabs, and not over jig-saw join, as shown:



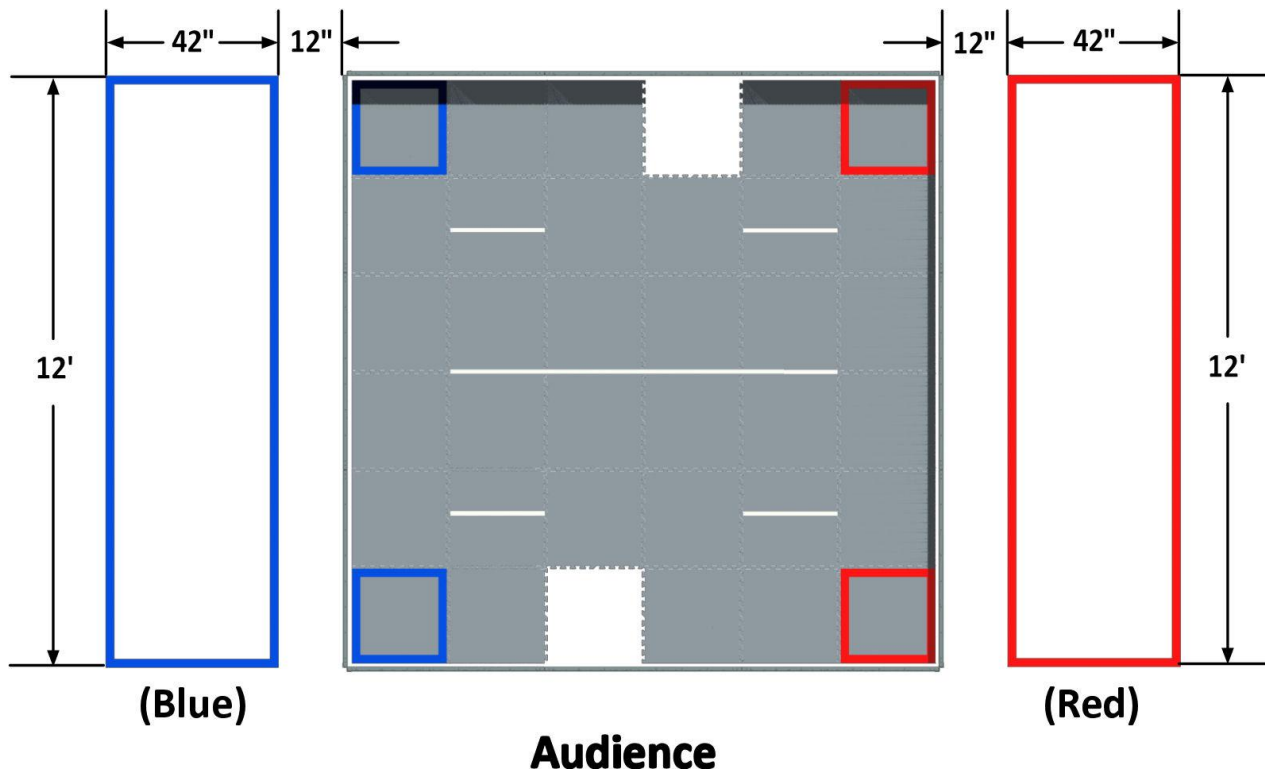
- C. Place the 1” white gaffer’s tape on the tiles in the positions shown.



- D. Note: the tape line is placed at the inside edges of the tile tabs. As shown. The middle tape line straddles the jig-saw join. (Highlighted in yellow).



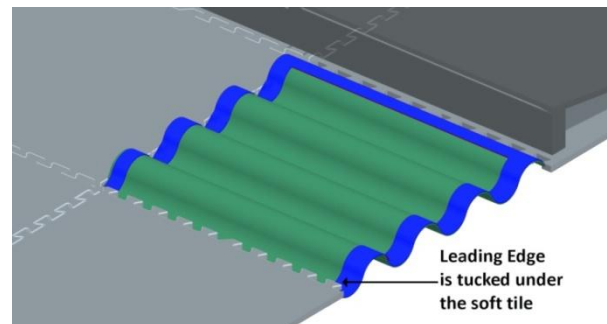
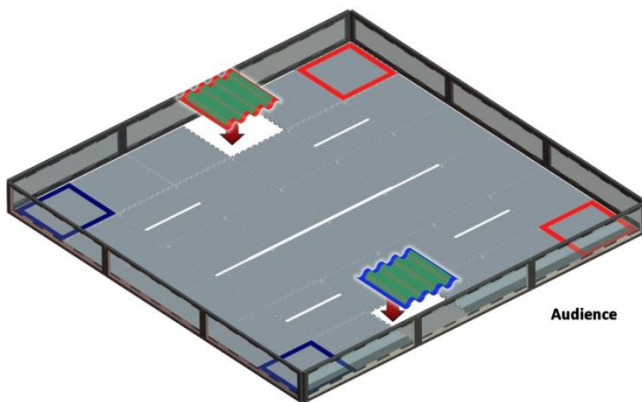
E. Use 2” red and blue gaffer’s tape to mark the driver stations on the floor outside the playing field:



PLACE THE GAME ELEMENTS.

Stationary Goals

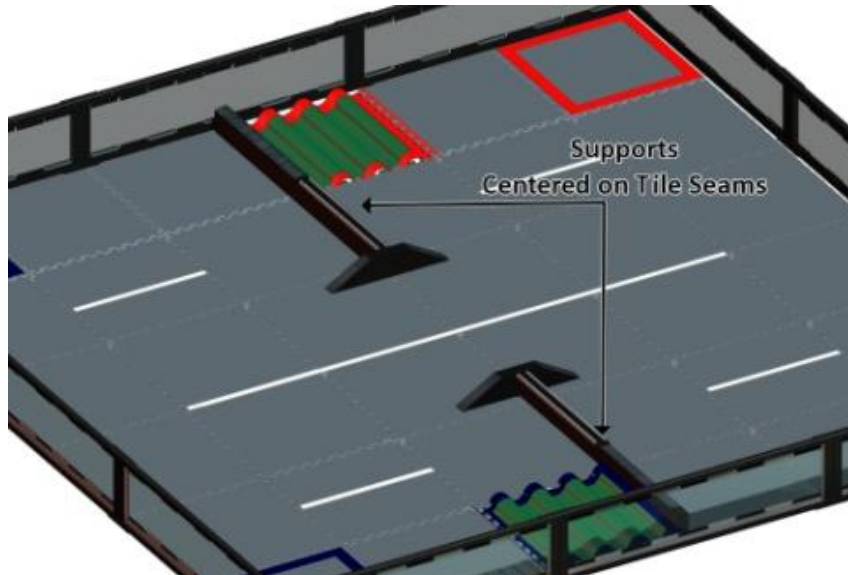
F. Place the Stationary Goals onto the playing field, in the spaces left by the removed soft tiles.



G. **Critical:** Ensure the leading edge of the low goal (edge closest to the starting box) is tucked under the tabs of the soft tile.

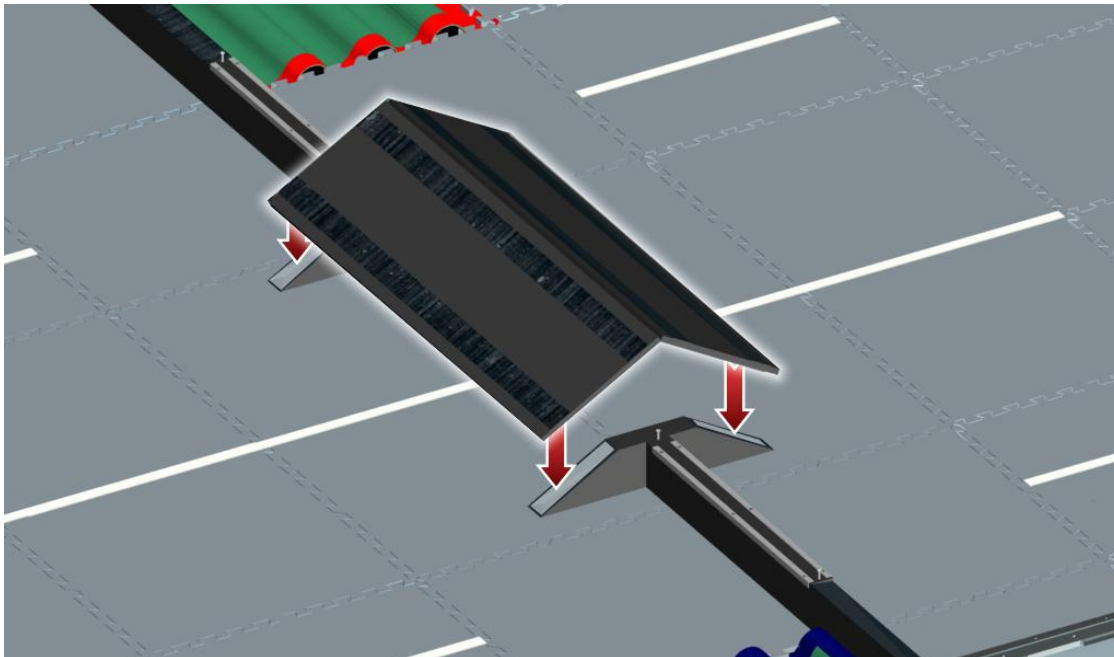
Mountain / Bridge / Cliff Support

- H. Place the bridge/cliff support onto the playing field with the long end centered (on the tile seam) as shown:



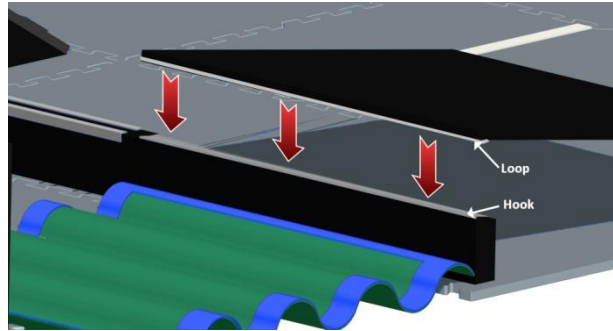
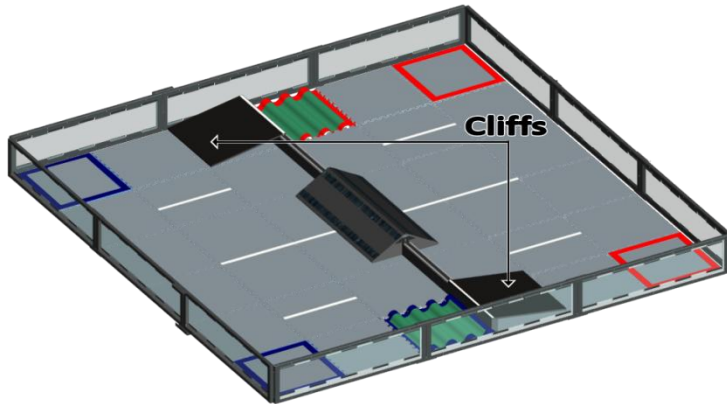
Mountain:

- I. Place the Mountain, pairing the hook side of the velcro strip to the strip on the support to the loop side on the underside of the Mountain.



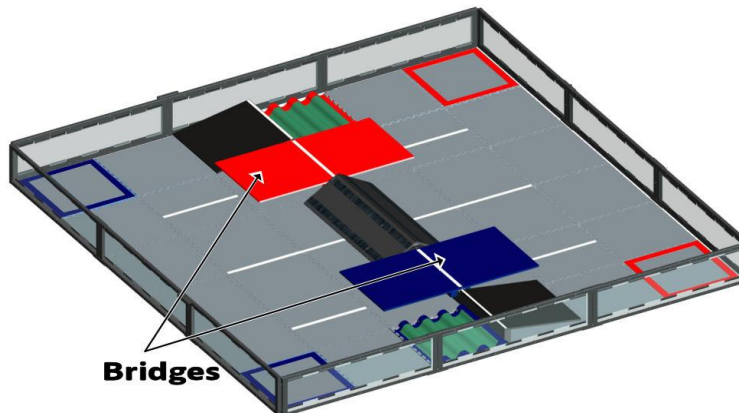
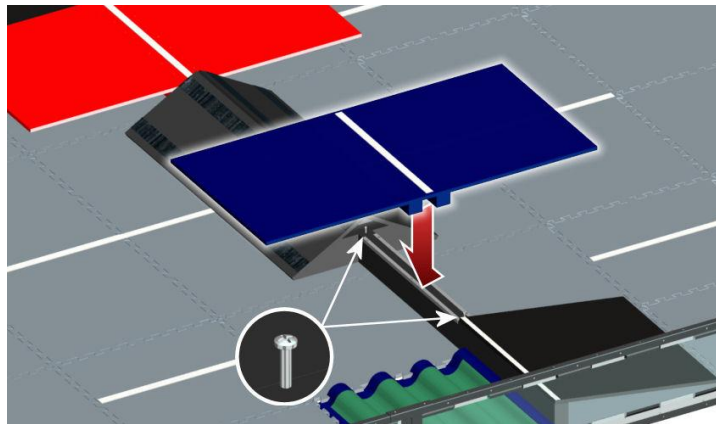
Cliffs:

- J.** Place the Cliffs, pairing the hook side of the velcro strip to the strip on the support to the loop side on the underside of the cliff.



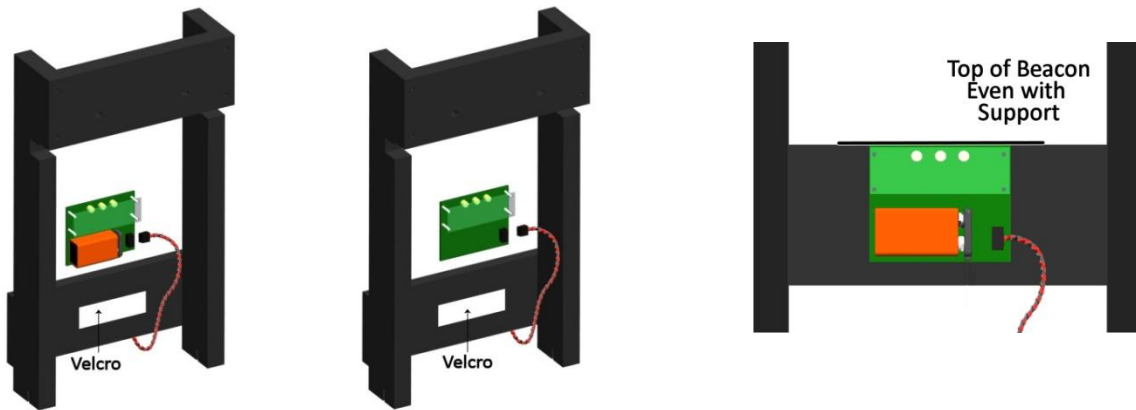
Bridges:

- K.** Place the bridges so they are centered and balanced on the support beam between the two alignment screws. Neither end of the bridge should touch the tiles at the start of play.

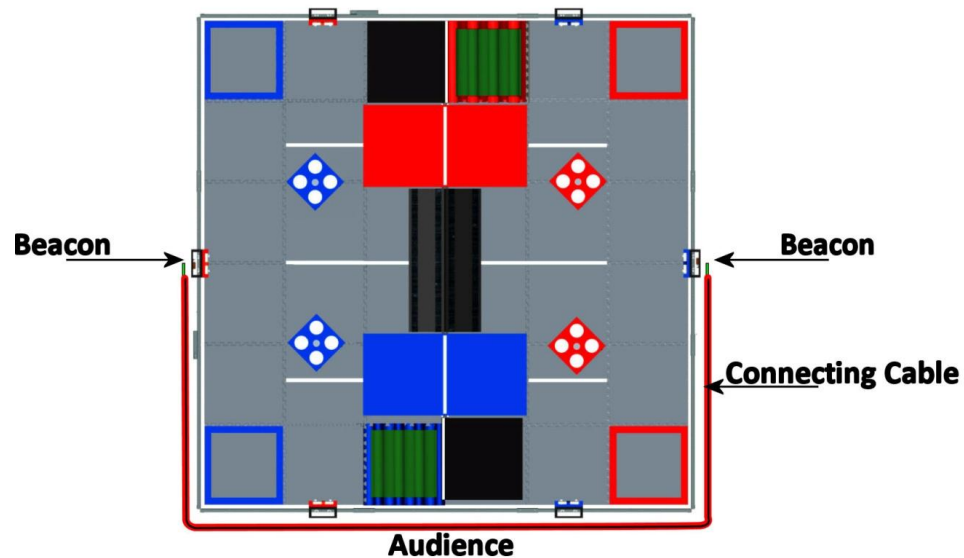


IR Beacons:

- L. Affix the Master and Slave IR Beacons to the middle supports with velcro. Ensure that the LED emitters are positioned at the top of the beacon. Run the long connecting cable under the support as shown. The top edge of the green PCB board should be even with the top edge of the support. (dispensers and walls, not shown for clarity).



- M. Place the IR Beacons behind the the Lexan of the center wall, under the middle dispenser (closets to the Alliance station). Connect the beacons with long cable, running the wire around the side closest to the audience. Tape wires down with gaffer's tape, for safety.



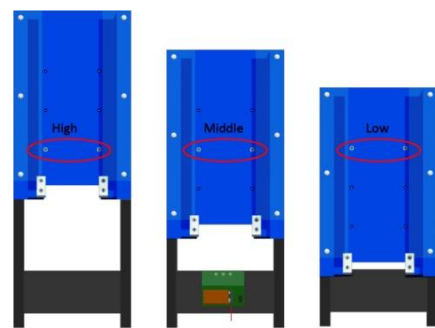
Tip: You can replace the 9V batteries in the IR Beacon with a wall plug transformer with a 9VDC pigtail. The transformer should have a minimum of 100mA in order to power both beacons. If you opt to use traditional 9V batteries, remember to change it out after 4 hours.



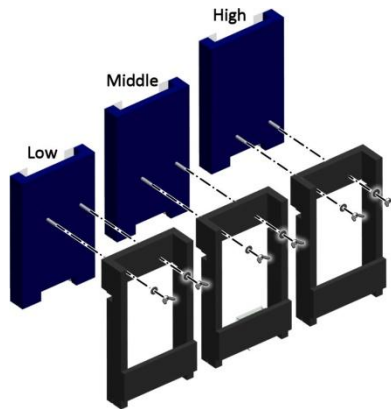
Dispensers:

- N.** All element dispensers and supports are the same size. The heights are determined by which screw access holes are used to fasten the dispensers to the supports. (See illustrations) **Critical: The screw heads must be countersunk on the front side so they do not interfere with the batons.**

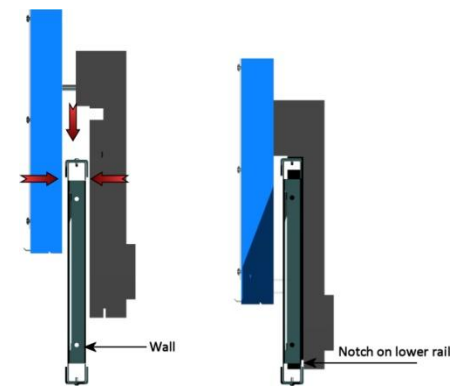
Attach the dispensers using two #10-32 x 3" flat head machine screws, through the front side of the assembly



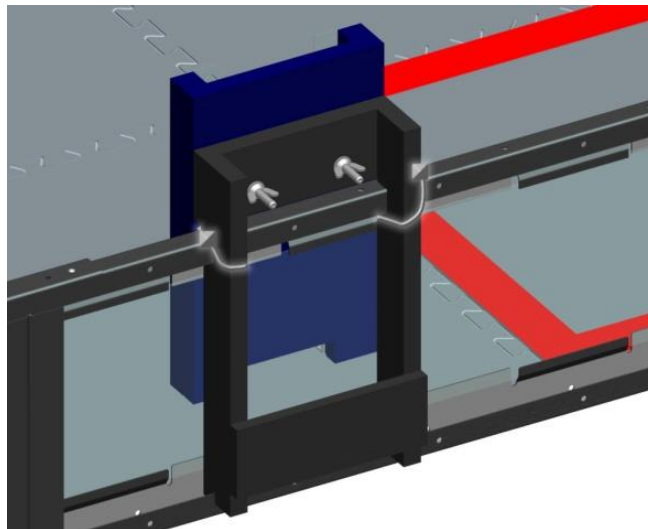
Pass the screws through the supports and place washers and wing-nuts on the ends. Leave them loose.



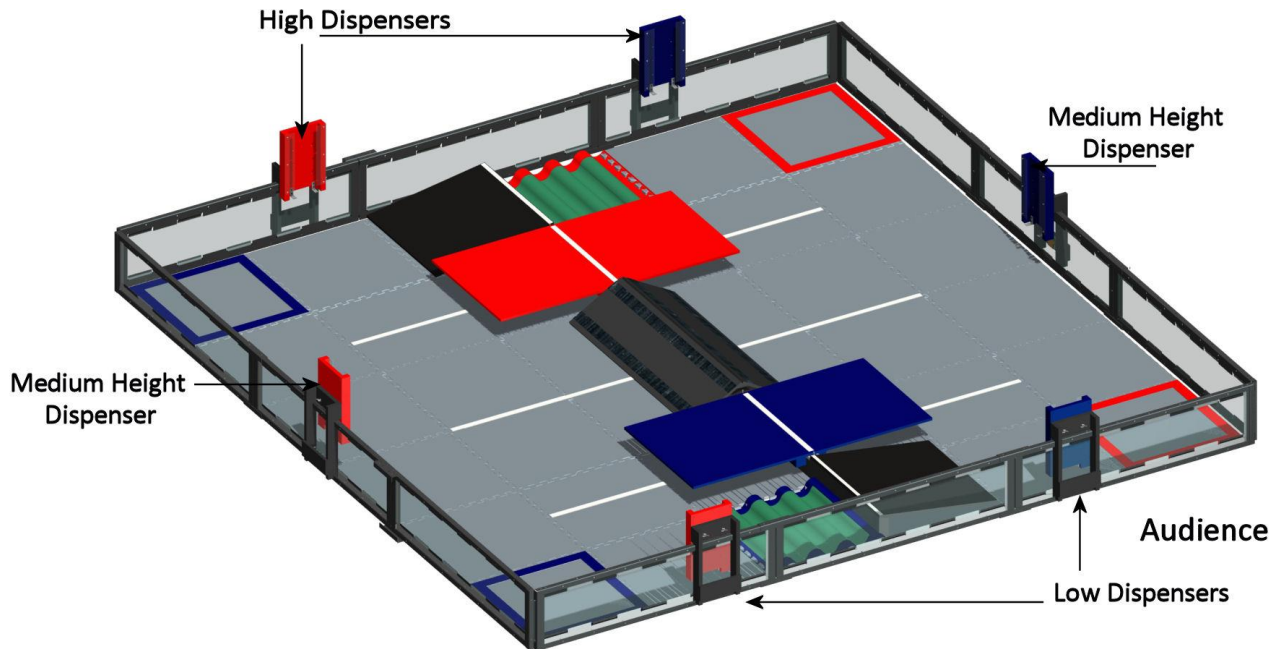
Carefully lower the dispenser and support over the perimeter wall, inserting the notch into the rail. When in place, tighten the wing-nuts.



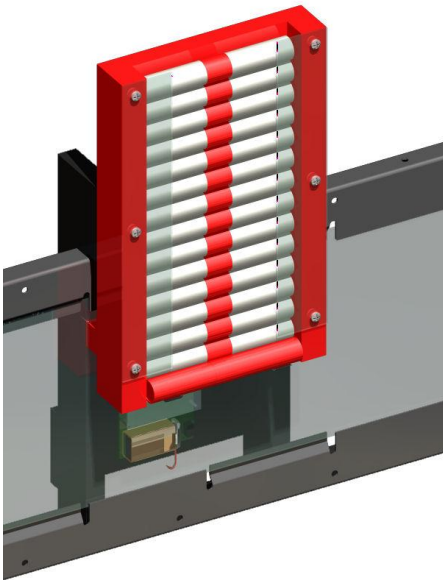
- O.** It may be necessary to snug the support up to the wall to keep it straight. Use tie wraps around the legs of the supports to pull it in tight to the wall. Use any convenient hole or opening between the lexan panel and the wall to pass the ties through.



- P. Element dispensers could be arranged with the low dispensers closest to the audience, the medium height next to the driver station, and the high dispensers on the back wall. Refer to the detailed drawing for placement.

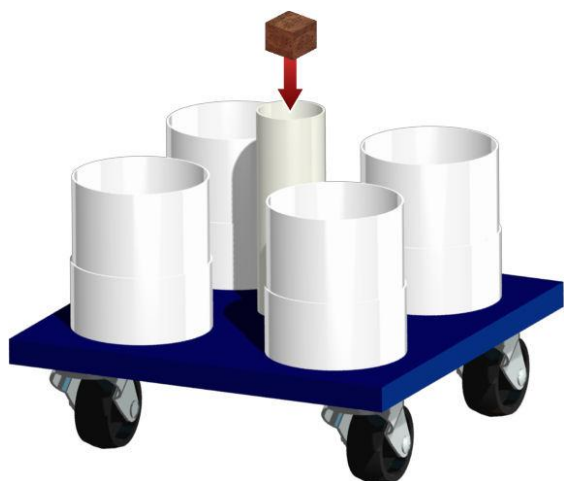


Reference View:



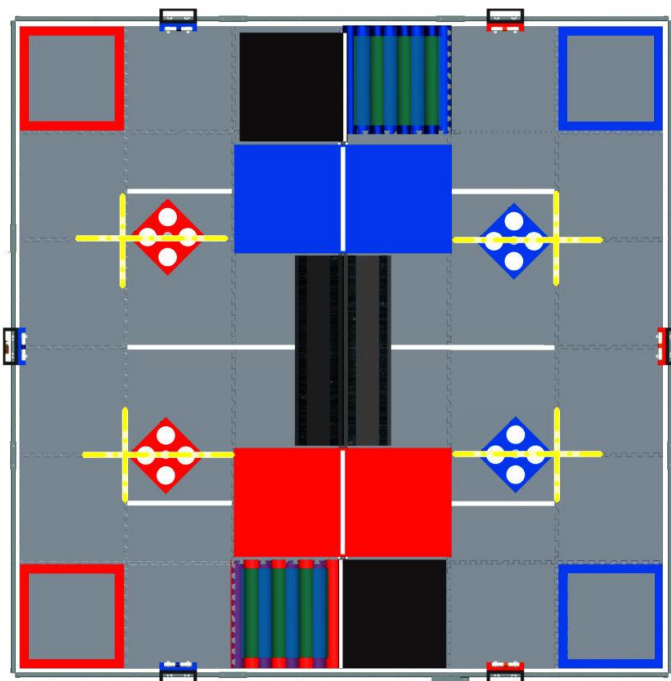
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Place Rolling Goals:



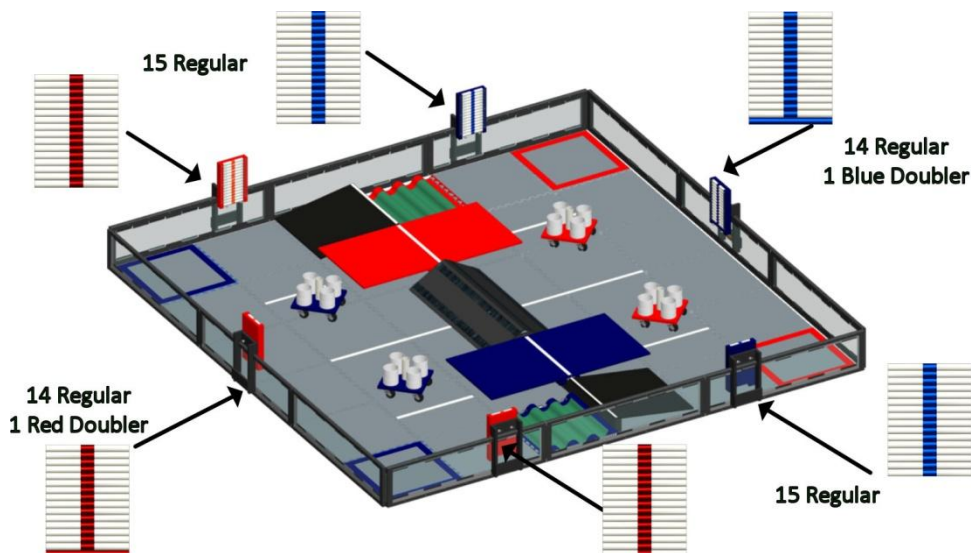
- Q. Critical Step:** Place the wooden spacer into the center pipe of each mobile goal. This allows for better visibility of the baton in the goal.

R. Place the Rolling Goals on the playing field in the starting positions as shown.



S. Load Batons into the Dispensers:

- Place 15 Regular (one stripe) Batons of the appropriate allinace color in the high and low dispensers.
- Place 14 Regular Batons and on Doubler (solid color) of the appropriate color in the Middle dispensers. The doubler should be at the bottom. This baton is only in play during the atutomous portion of the match. If it is not dispensed, it is removed and remains out of play for the remainder of the match. *See the game manual for details.*
- The 5 double striped batons are given to the teams for pre-loading on their robots.



**4 Regular batons (2 red and 2 blue) will have magnets hidden inside, and are placed randomly within the dispensers.*

Zen and the Art of “Get Over It” Setup

Game Controllers:

Teams will connect to their robots to the FCS via the Samantha Wifi Module. Four robots per field, 2 controllers per robot.

Connect 4 game controllers per alliance, to a 4-port Powered USB hub, located near the center dispenser on either side. The FCS will ask teams to identify which controllers they are using. It is suggested you label each controller as follows:

- Red Alliance:
 - Red 1, Controller 1 (R1 C1)
 - Red 1, Controller 2 (R1, C2)
 - Red 2, Controller 1 (R2 C1)
 - Red 2, Controller 2 (R2 C2)
- Blue Alliance:
 - Blue 1, Controller 1 (B1 C1)
 - Blue 1, Controller 2 (B1, C2)
 - Blue 2, Controller 1 (B2 C1)
 - Blue 2, Controller 2 (B2 C2)

Using a long (16') USB cable, connect the hubs to the FCS computer.

Critical: The FCS computer and the USB Hubs must be plugged into a power source. Do not rely on battery power for your event.

