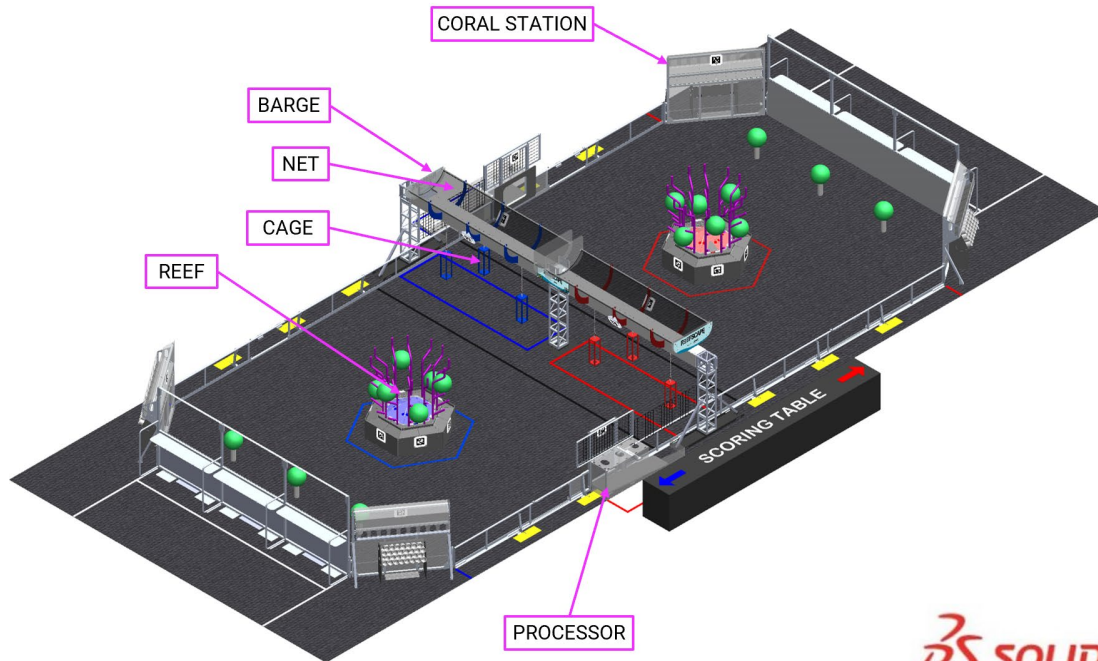


## 5 ARENA

The ARENA includes all elements of the game infrastructure that are required to play REEFSCAPE<sup>SM</sup> presented by Haas: the FIELD, SCORING ELEMENTS, queue area, team media area, designated TECHNICIAN area, and all equipment needed for FIELD control, ROBOT control, and scorekeeping.

Figure 5-1 REEFSCAPE ARENA (queue area, TECHNICIAN area, and media area not pictured)



**SOLIDWORKS**  
Modeling Solutions Partner

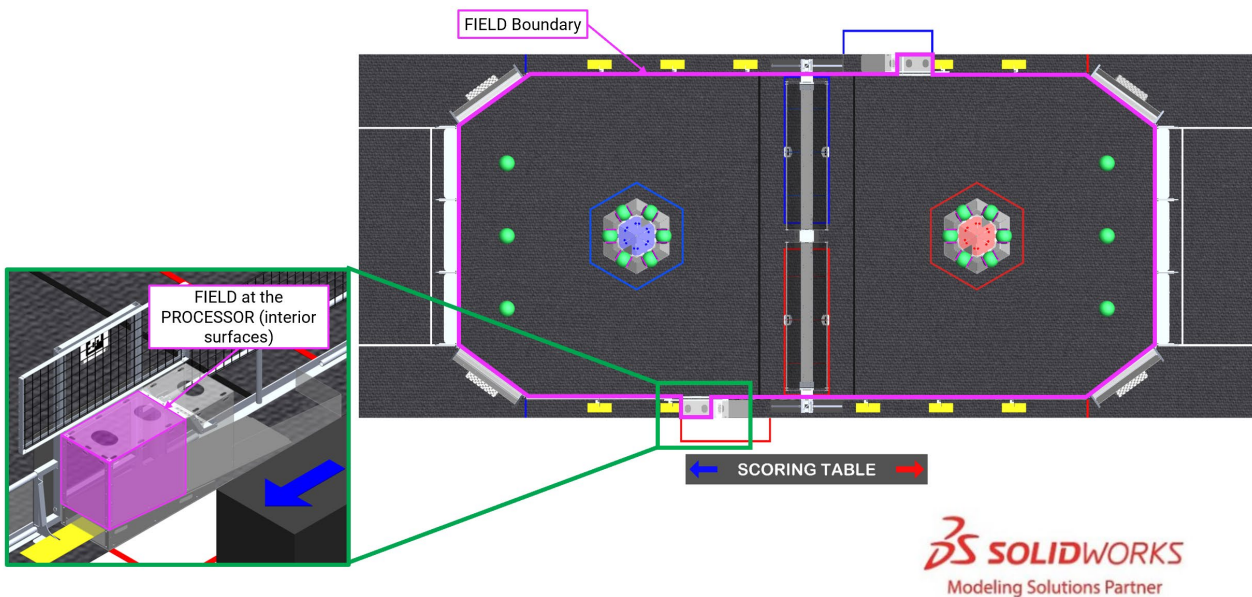
The ARENA is modular and assembled, used, disassembled, and shipped many times during the competition season. It undergoes wear and tear. The ARENA is designed to withstand rigorous play and frequent shipping. Every effort is made to ensure that ARENAS are consistent from event to event. However, ARENAS are assembled in different venues by different event staff and some small variations occur. For details regarding assembly tolerances, please refer to the [2025 ARENA Layout and Marking Diagram](#). Successful teams will design ROBOTS that are insensitive to these variations.

Illustrations included in this section are for a general visual understanding of the REEFSCAPE ARENA, and dimensions included in the manual are nominal. Please refer to the official drawings for exact dimensions, tolerances, and construction details. The official drawings, CAD models, and drawings for low-cost versions of important elements of the REEFSCAPE FIELD are posted on [the REEFSCAPE Playing FIELD web page](#) on the FIRST website.

### 5.1 FIELD

Each FIELD for REEFSCAPE is an approximately 26 ft. 5 in. (~805 cm) by 57 ft. 6 $\frac{3}{4}$  in. (~1 755 cm) carpeted area bounded by inward facing surfaces of the ALLIANCE WALLS, CORAL STATIONS, PROCESSORS and PROCESSOR openings, and guardrails.

Figure 5-2 FIELD boundary in pink



The FIELD is populated with and surrounded by the following elements:

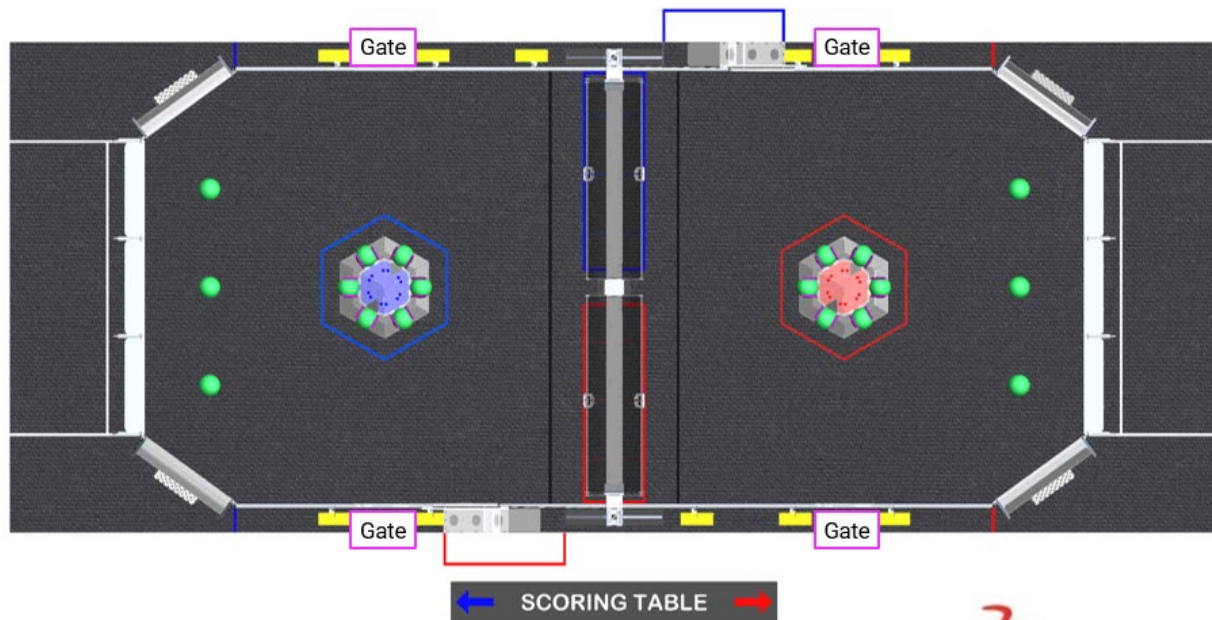
- 1 REEF per ALLIANCE,
- 1 PROCESSOR per ALLIANCE,
- 2 CORAL STATIONS per ALLIANCE, and
- 1 BARGE which consists of 3 CAGES and 1 NET for each ALLIANCE.

The surface of the FIELD is low pile carpet, Shaw Floors, Philadelphia Commercial, Neyland II 20, “66561 Medallion.” Neyland II carpet is not available for purchase, and the closest equivalent is [Shaw, Philadelphia Brand, Profusion 20, Style 54933](#); see results from FIRST’s evaluation in [this blog post](#).

Carpet edges and seams are secured with 3M™ Premium Matte Cloth (Gaffers) Tape GT2, GT3 or comparable Gaffer’s Tape. Tears, rips, and damage to the carpet may be repaired with the same styles of tape and ROBOTS must be prepared to operate on surfaces made of carpet, tape, or combinations of both materials as repairs are made through the course of competition.

Guardrails form the long edges of the FIELD. Guardrails are a 1 ft. 8 in. (~51 cm) tall system of transparent polycarbonate supported on the top and bottom by aluminum extrusion. There are 4 gates in the guardrail that allow access to the FIELD for placement and removal of ROBOTS. The gate passthrough, when open, is 3 ft. 2 in. (~97 cm) wide. Gates are closed and shielded during the MATCH.

Figure 5-3 Gate locations



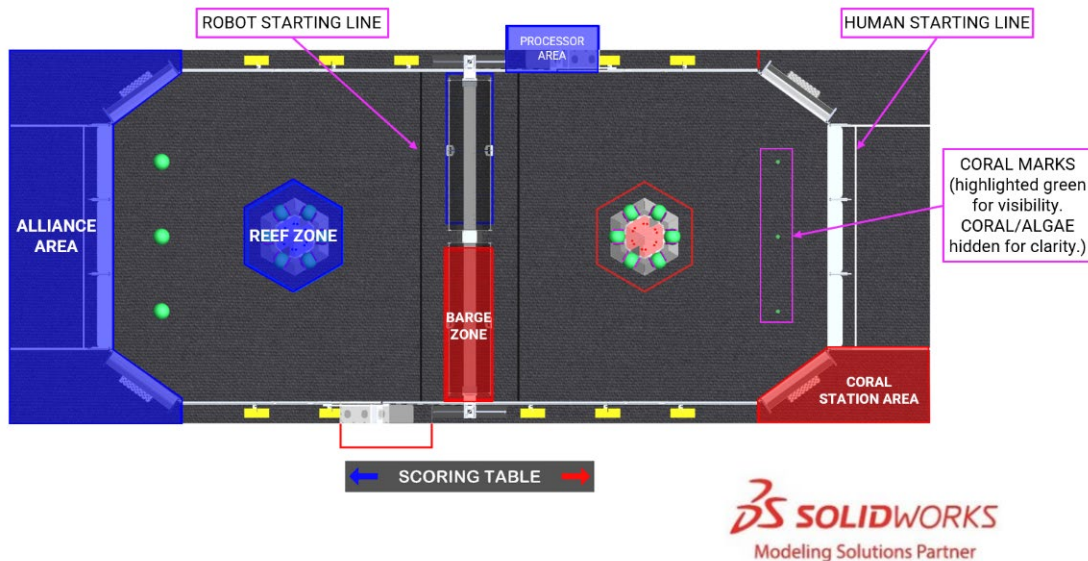
There are 2 versions of guardrails and DRIVER STATIONS used for competitions. 1 design is reflected in the [2025 Official FIRST FIELD Drawings & Models](#). The other is designed and sold by AndyMark. While the designs are slightly different, the critical dimensions, performance, and expected user experience between them are the same unless otherwise noted. Detailed drawings for the AndyMark design are posted on the [AndyMark website](#). All illustrations in this manual show the traditional FIELD design.

## 5.2 Areas, Zones, & Markings

FIELD areas, zones, and markings of consequence are described below. Unless otherwise specified, the tape used to mark lines and zones throughout the FIELD is 2 in. (~51 mm) [3M™ Premium Matte Cloth \(Gaffers\) Tape \(GT2\)](#), [ProGaff® Premium Professional Grade Gaffer Tape](#), or comparable gaffers tape.



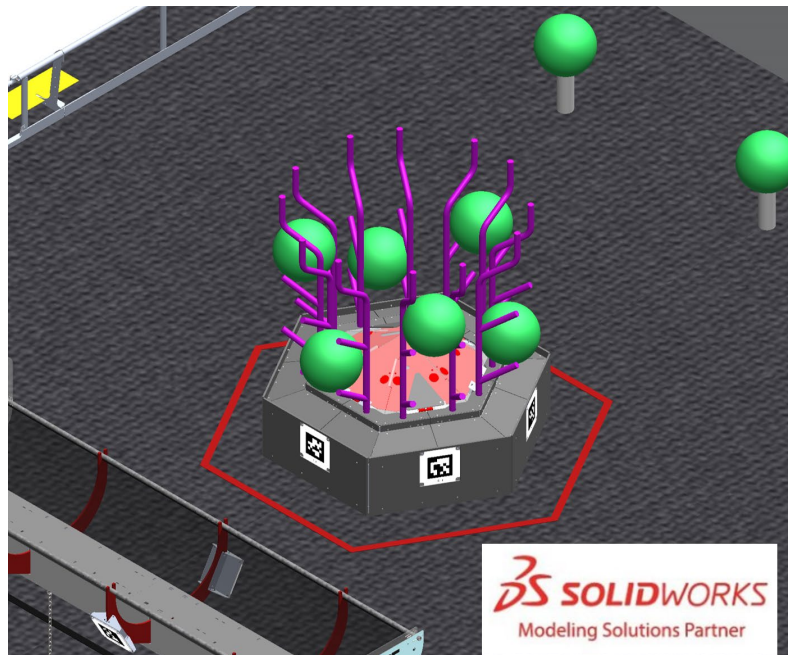
Figure 5-4 Areas, markings, and zones



- **ALLIANCE AREA:** a 30 ft. wide by 13 ft. 8 $\frac{3}{8}$  in. deep (~914 cm by 423 cm) infinitely tall volume formed by, and including the ALLIANCE WALL, CORAL STATION AREAs, the edge of the carpet, and white colored tape perpendicular to the DRIVER STATIONS.
- **BARGE ZONE:** a 3 ft. 10 in. deep by 12 ft. 2 $\frac{1}{2}$  in. long (~117 cm by 372 cm), infinitely tall, 4-sided volume surrounding the ALLIANCE’S half of the BARGE. It is bounded by and includes the ALLIANCE-colored tape.
- **CORAL MARK:** 1 of 6 4 in. by 4 in. (~102 mm by 102 mm) “+” marks used to identify placement of CORAL before the MATCH. Marks are made with black tape.
- **CORAL STATION AREA:** a 5 ft. 10 $\frac{7}{8}$  in. wide by 13 ft. 8 $\frac{3}{8}$  in. ft deep (~180 cm by 423 cm) infinitely tall volume bounded by the CORAL STATION, edge of carpet, and ALLIANCE and white colored tape.
- **HUMAN STARTING LINE:** a white line spanning the ALLIANCE AREA between the CORAL STATION AREAs that is parallel to and located 2 ft. (~61 cm) from the bottom square tube of the ALLIANCE WALL to the near edge of the tape.
- **PROCESSOR AREA:** a 3 ft. 7 $\frac{3}{8}$  in. wide by 7 ft. 6 in. deep (~110 cm by 229 cm) infinitely tall volume formed by, and including, the ALLIANCE colored tape, guardrail, and the PROCESSOR wall.
- **REEF ZONE:** an infinitely tall 6-sided, 7 ft. 9 $\frac{1}{2}$  in. wide (face to face) (~237 cm), volume surrounding the ALLIANCE’S REEF. It is bounded by and includes the ALLIANCE-colored tape.
- **ROBOT STARTING LINE:** a black line that spans the width of the FIELD between each REEF and the BARGE. It is positioned such that it is 7 ft. 4 in. (~224 cm) from the REEF.

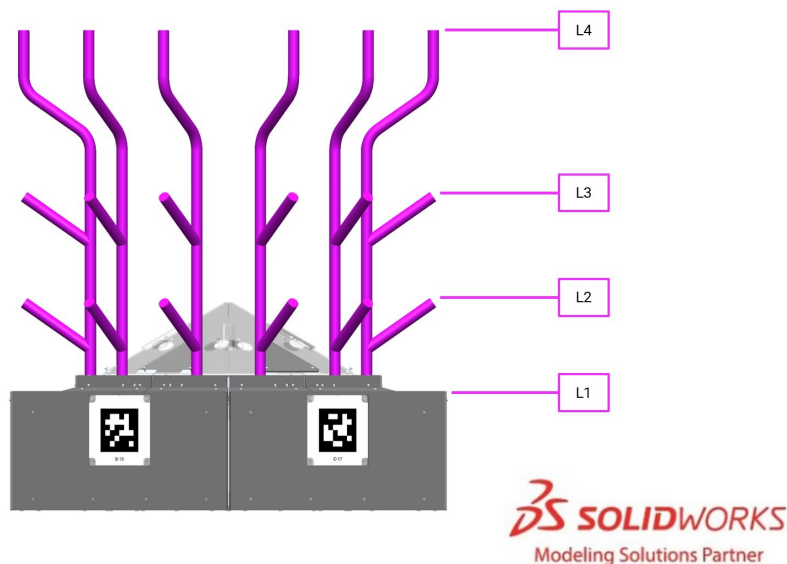
### 5.3 REEF

Figure 5-5 REEF



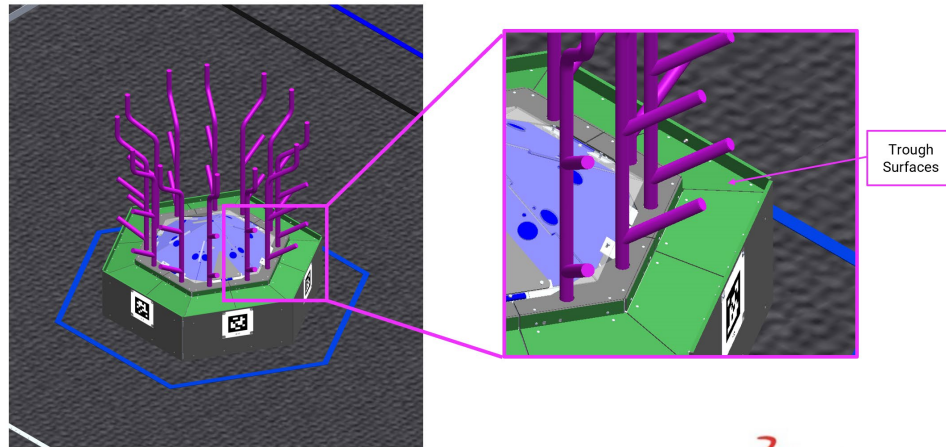
A REEF is 1 of 2 5 ft. 5 ½ in. (~166 cm) hexagonal structures with BRANCHES that extend from each side where CORAL are scored. Each ALLIANCE has a dedicated REEF centered between each guardrail and located 12 ft. away from the ALLIANCE WALL. Each REEF has 4 levels to score on: Level 1 (L1), Level 2 (L2), Level 3 (L3), and Level 4 (L4).

Figure 5-6: Scoring Level Locations (L1-L4)



The base of each REEF has a trough (L1) into which ROBOTS can score CORAL. The trough includes the angled and vertical surfaces, as well as the top of the front edge as shown in [Figure 5-7](#). The front edge of the trough is 1 ft. 6 in. (~46 cm) off the carpet.

Figure 5-7: Trough Surfaces



**SOLIDWORKS**  
Modeling Solutions Partner

Vertical pipes extend up from the base, and pipes on the same face are 1 ft. 1 in. (~33 cm) apart (center to center). The pipes are made out of 1-¼ in. Schedule 40 Steel. Each pipe has 3 BRANCHES which are angled or compound extensions from the REEF vertical pipes.

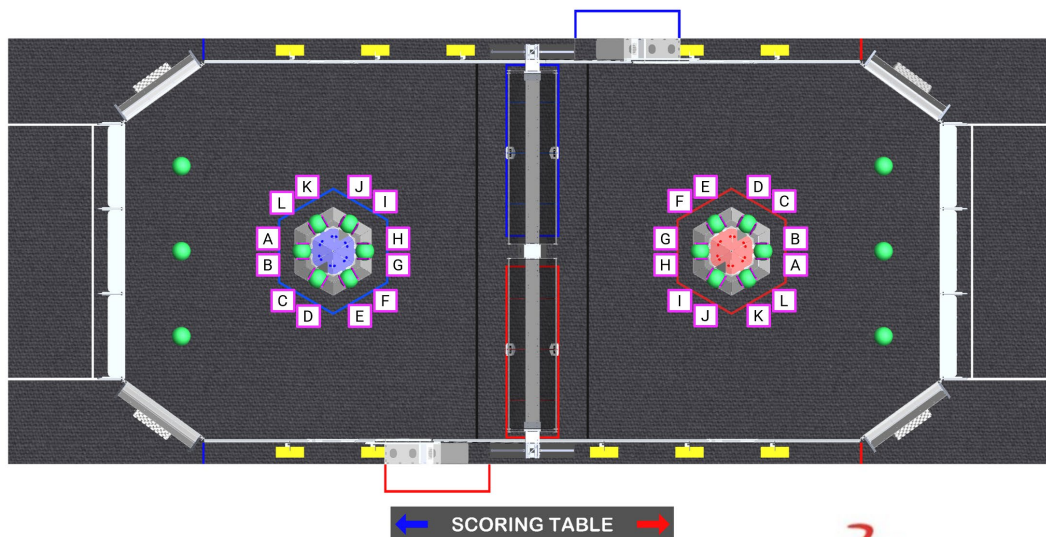
L2 is the 12 lowest level BRANCHES and are angled up at 35°. The highest point of the L2 BRANCH is 2 ft. 7⅞ in. (~81 cm) from the carpet and is inset 1⅝ in. (~41 mm) from the REEF base.

L3 is the 12 mid-level BRANCHES and are angled up at 35°. The highest point of the L3 BRANCH is 3 ft. 11⅝ in. (~121 cm) from the carpet and is inset 1⅝ in. (~41 mm) from the REEF base.

L4 is the 12 highest-level BRANCHES and they are vertical. The highest point of the L4 BRANCH is 6 ft. (~183 cm) from the carpet and is inset 1⅝ in. (~29 mm) from the REEF base.

For scoring purposes, the BRANCHES of the REEF are tracked in FMS as follows:

Figure 5-8: Reef Scoring Location Tracking

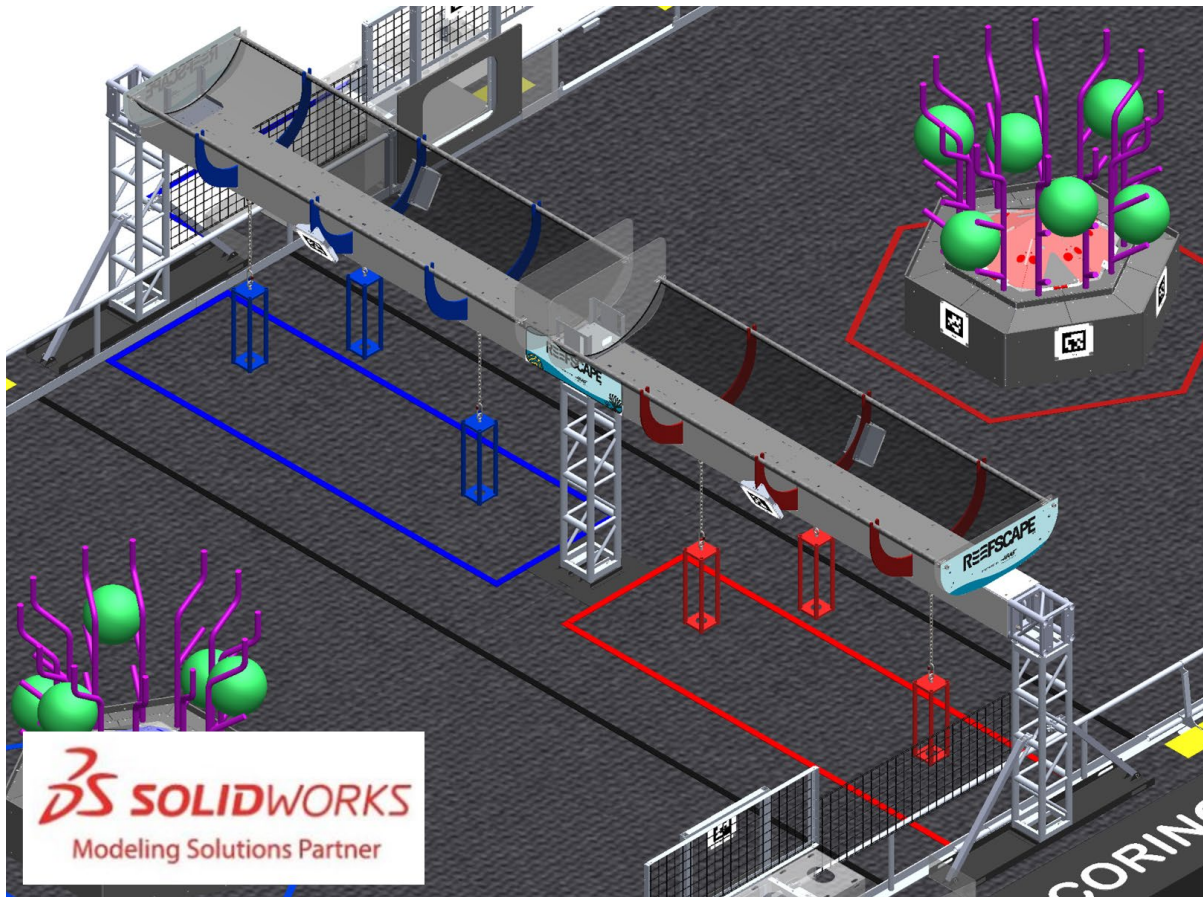


**SOLIDWORKS**  
Modeling Solutions Partner



## 5.4 BARGE

Figure 5-9 BARGE

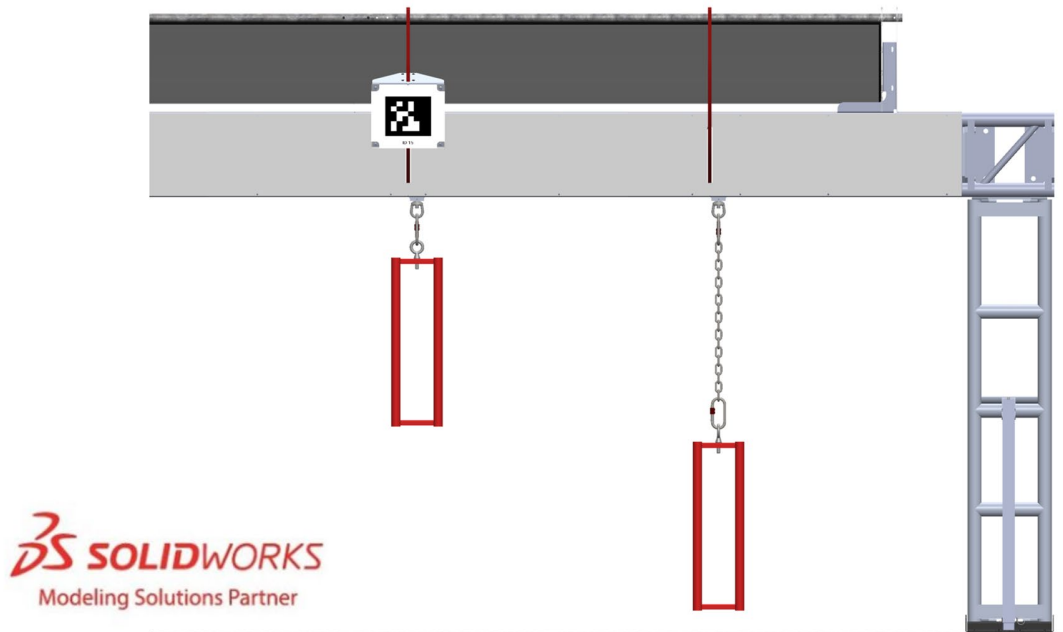


The BARGE is a 29 ft. 2 in. (889 cm) wide, 3 ft. 8 in. (~112 cm) deep, and 8 ft. 5 in. (~257 cm) tall structure that spans the center of the FIELD. It is made of truss structure supported by legs just outside the guardrail. The BARGE includes 6 CAGES, a red and blue NET, and all structure supporting CAGES and NETS. The horizontal truss structure is 5 ft. 2 in. (~157 cm) above the carpet and is supported in the center of the FIELD by vertical truss and supporting materials. The BARGE has three CAGE locations on each side located 3 ft. 5½ in., 7 ft. ¾ in., 10 ft. 7¾ in. (~105 cm, ~214 cm, ~324 cm) from mid field to the center of the CAGE.

The BARGE has three segments of lights on each side of the truss which indicate progression toward and completion of the *Coopertition* Bonus and the final 20 seconds in the match. One segment will light up each time an ALGAE is scored in the PROCESSOR. Once each alliance has scored two ALGAE all six segments will illuminate. The lights will flash to indicate that there are 20 seconds left in the match. At the end of the match, the lights will illuminate and then turn off 3 seconds after the ARENA timer displays 0:00 following TELEOP to help indicate to REFEREES when scoring assessments should be made.

### 5.4.1 CAGE

Figure 5-10 Shallow (left) and Deep (right) staged CAGES



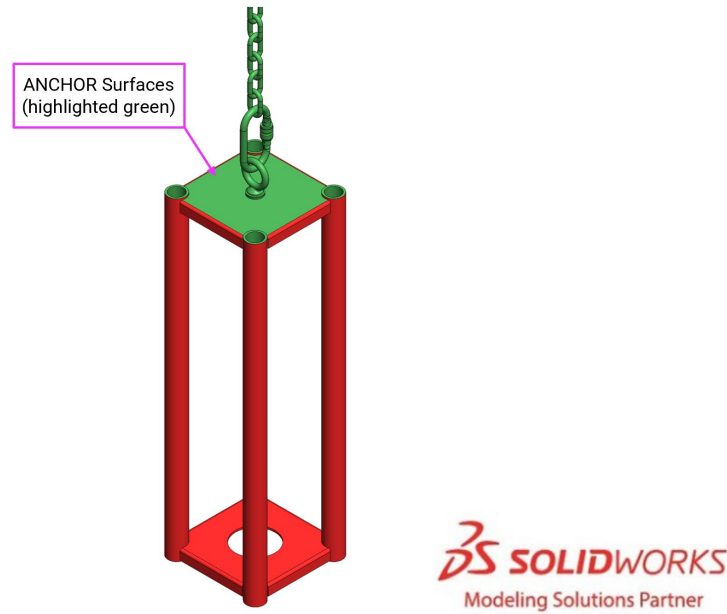
CAGES are 2 ft. tall and 7<sup>3</sup>/<sub>8</sub> in. wide (outside dimension) (~61 cm tall and ~19 cm wide) rectangular structures. Each CAGE is a welded structure made of 4 steel 1 in. Schedule 40 pipes, a bottom plate, a top plate, and an eyebolt with fastening hardware. CAGES are suspended from the truss structure in specific locations as shown in [Figure 5-9](#) and hang at shallow or deep positions according to the corresponding team's selection (see section [6.3.5 CAGES](#) for details) such that the bottom of the cage is 2 ft. 6-1/8 in. (~77 cm) and 3-1/8 in. (~79 mm) from the carpet respectively. Deep CAGES are suspended using chain that is 19 links of [1/4-in. Grade 43 zinc plated chain](#).

ANCHORS are a collection of surfaces at the top of the CAGE and chain assembly that include the following items and as shown in [Figure 5-11](#):

- A. the top surface of the CAGE top plate,
- B. the chain,
- C. both carabiners,
- D. the portion of the eye bolt extending above the CAGE top plate,
- E. the eye nut attached to the BARGE,
- F. the upper end surfaces of the CAGE pipes, and
- G. the inside surfaces of the CAGE pipes.

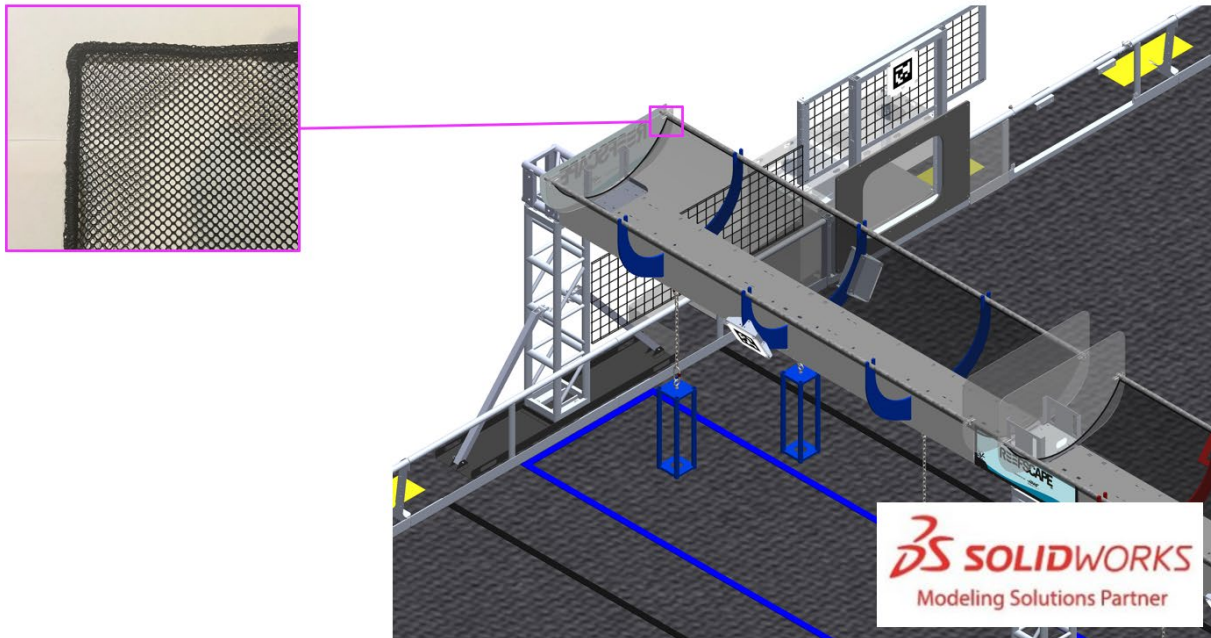


Figure 5-11: ANCHOR Surfaces



#### 5.4.2 NET

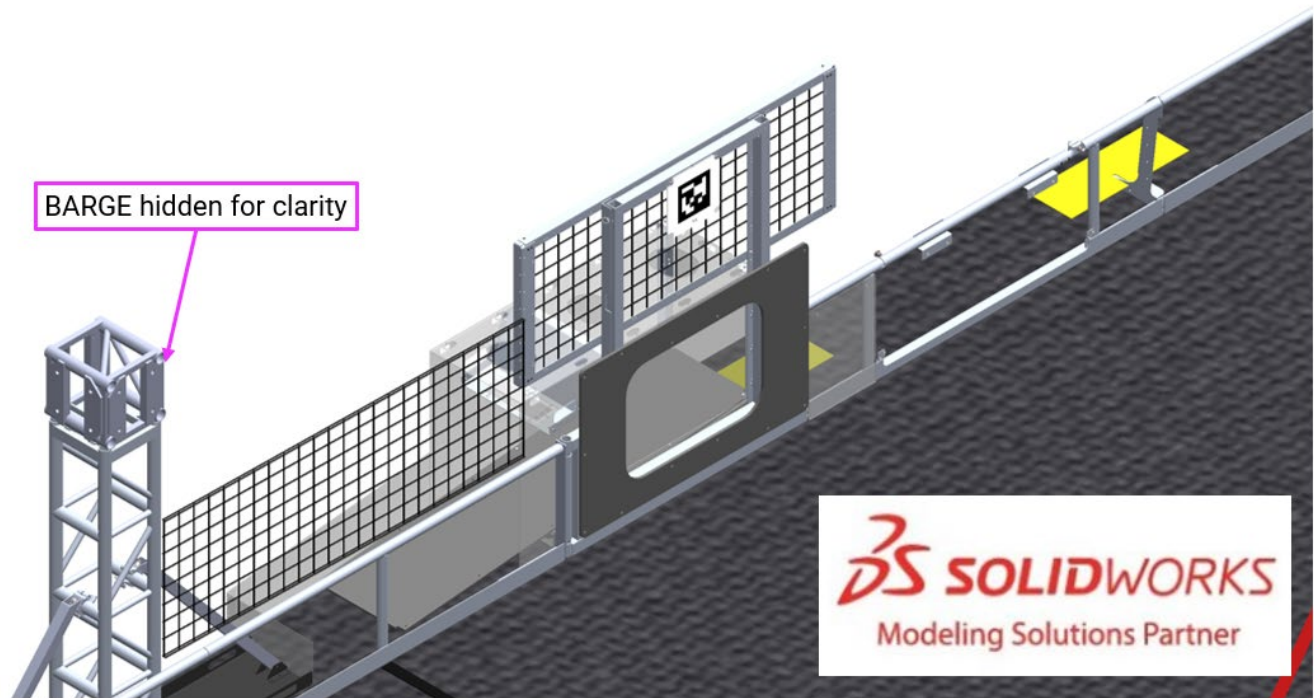
Figure 5-12 NET



A NET is a goal in which an ALLIANCE scores ALGAE. The NET is  $\frac{1}{4}$  in. (~6 mm) knit polyester mesh, 4 ft. (~122 cm) wide by 12 ft. (~366 cm) long with a sewn cord border. It is available for purchase from AndyMark, [am-5522](http://am-5522). It is suspended from the top of the BARGE such that its lowest point hangs 6 ft. 4 in. (~193 cm) above the FIELD carpet. There is a NET for the Blue ALLIANCE and for the Red ALLIANCE.

## 5.5 PROCESSOR

Figure 5-13: PROCESSOR

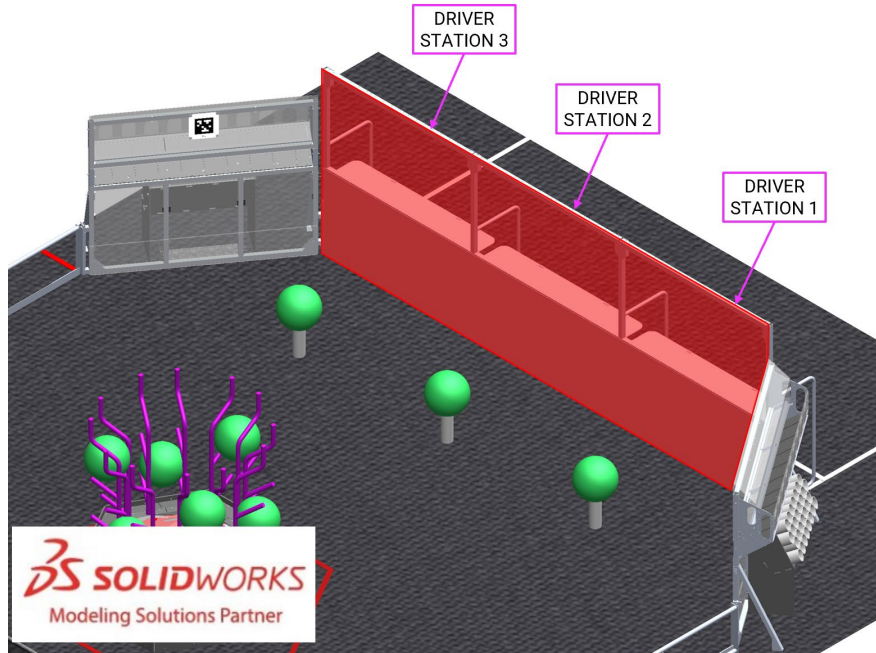


A PROCESSOR is a goal into which an ALLIANCE scores ALGAE. There is 1 PROCESSOR per ALLIANCE. The PROCESSOR is integrated into the guardrail near the ALLIANCE'S REEF ZONE and adjacent to the opponent's PROCESSOR AREA. Each PROCESSOR has a rectangular opening through which ROBOTS score ALGAE which is 2 ft. 4 in. wide (~71 cm), 1 ft. 8 in. tall (~51 cm), and 7 in. (~18 cm) from the carpet.

Once an ALGAE passes through the PROCESSOR, it rolls past a scoring sensor array and into the opponent's PROCESSOR AREA. The HUMAN PLAYER must keep the PROCESSOR clear for scoring, and can shift scored ALGAE on top of the PROCESSOR where there are designated ALGAE holders.

## 5.6 ALLIANCE WALL

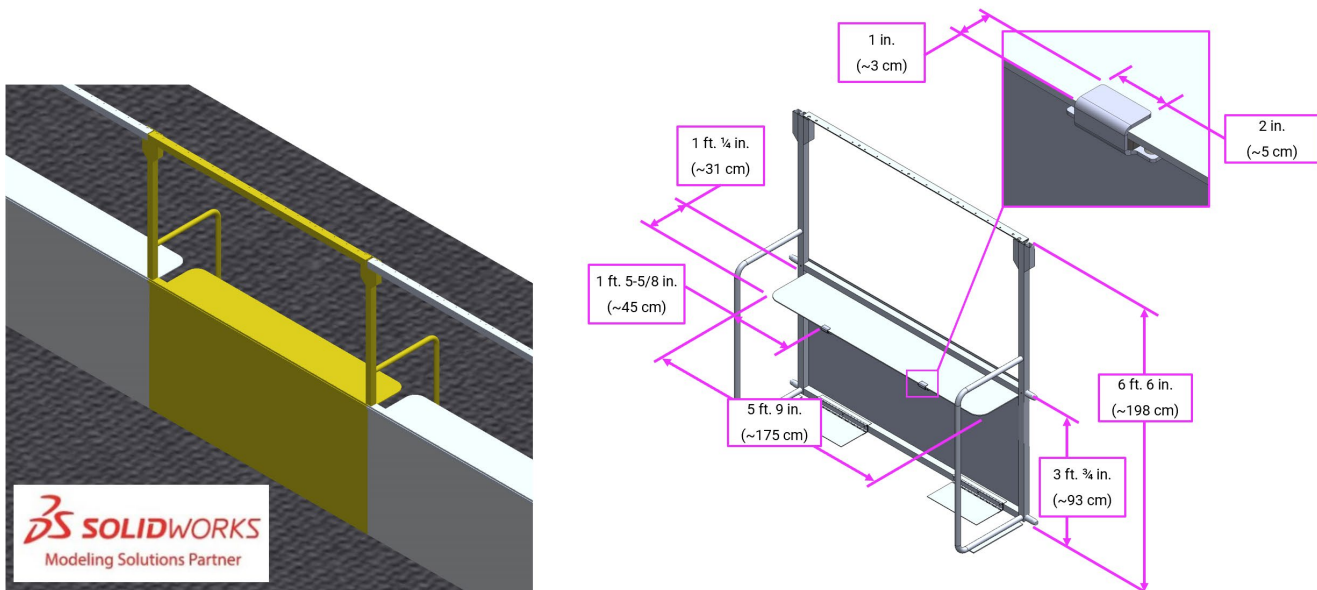
Figure 5-14: Red ALLIANCE WALL (highlighted in red)



The ALLIANCE WALL separates ROBOTS from DRIVE TEAM members in the ALLIANCE AREA. It consists of 3 DRIVER STATIONS.

### 5.6.1 DRIVER STATIONS

Figure 5-15 DRIVER STATION (ALLIANCE AREA perspective and FIELD perspective)



A DRIVER STATION is 1 of 3 assemblies within an ALLIANCE WALL behind which a DRIVE TEAM operates their ROBOT. Each DRIVER STATION is made from a 3 ft.  $\frac{3}{4}$  in. (~93 cm) tall diamond plate base topped with a 3 ft. 6 in. (~107 cm) tall transparent plastic sheet and a top rail. An aluminum shelf is attached to each DRIVER



STATION to support an OPERATOR CONSOLE. The shelf is 5 ft. 9 in. (~175 cm) wide and 1 ft. ¼ in. (~31 cm) deep. There is a 4 ft. 6 in. (~137 cm) long by 2 in. (nominal) wide strip of hook-and-loop tape ("loop" side) along the center of the support shelf that may be used to secure the OPERATOR CONSOLE to the shelf. The shelf also includes two clips to hold the shelf in place with a 1 in. (~25 mm) by 2 in. (~51 mm) thick tab that sits on the top surface of the shelf.

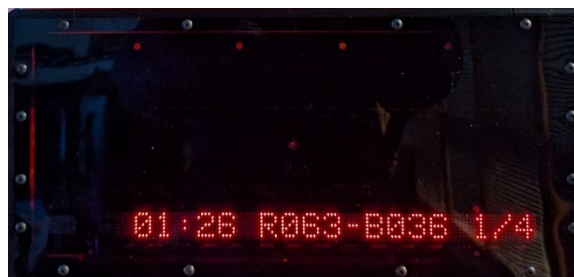
There may be a ramp available at events for DRIVE TEAMS with limited mobility. It is designed to allow an individual using a wheelchair to access the DRIVER STATION shelf and/or see onto the FIELD; however, this accommodation is available to anyone who has a wheelchair or other physical disability that obstructs their view of the FIELD. Due to space constraints, the ramp is not allowed to be used in the PROCESSOR AREA. Teams should speak to the FTA before MATCHES begin to ensure that it is available for each of the team's MATCHES.

This ramp is available at many Regional and District events. For questions, please connect with the local [Program Delivery Partner](#).

Each DRIVER STATION contains the following elements for DRIVE TEAMS:

- 1 Ethernet cable: attaches to the Ethernet port of the OPERATOR CONSOLE and provides connectivity to the FIELD Management System (FMS)
- 1 120VAC NEMA 5-15R power outlet (i.e. standard US outlet): located on each DRIVER STATION shelf and protected by its own 2-Amp circuit breaker. It can be used to power the OPERATOR CONSOLE. DRIVE TEAMS are responsible for monitoring their power consumption as a tripped breaker in the outlet does not constitute an ARENA FAULT. For some events in regions that don't use NEMA 5-15 shaped outlets, event organizers may install appropriate plug adapters to be used throughout the event.
- 1 Emergency Stop (E-Stop) button: located on the left side of the DRIVER STATION shelf and is used to deactivate a ROBOT in an emergency
- 1 Autonomous Stop (A-Stop) button: located on the right side of the DRIVER STATION shelf and is used to DISABLE a ROBOT during AUTO
- 1 team sign: located at the top of each DRIVER STATION. The FIELD facing side of the sign displays the team number in the ALLIANCE color. The ALLIANCE AREA side of the sign displays the following information in red:
  - Pre-MATCH: team number and ROBOT connection state
  - During the MATCH:
    - remaining MATCH period time,
    - MATCH scores, and
    - progress towards the CORAL RP threshold (n/a during the Playoff Tournament).

Figure 5-16 Back of team sign



- 1 timer (in DRIVER STATION 2 only): displays the official time remaining in the MATCH period on the FIELD-facing side (in white) and a more detailed breakdown of CORAL scored on each level of the REEF on the TEAM-facing side. (in red).

Figure 5-17 Back of timer



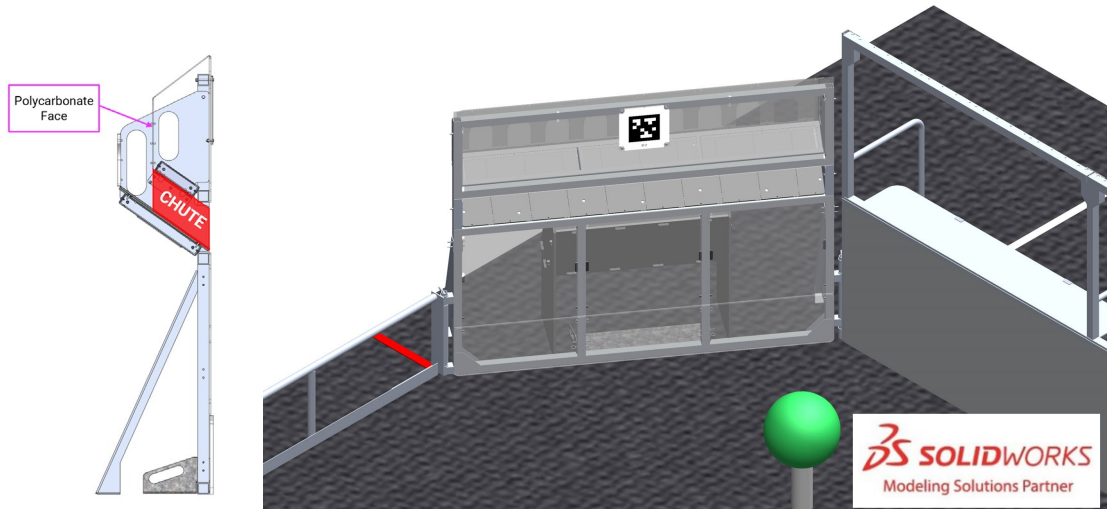
- 1 team LED stack: indicates ALLIANCE color, ROBOT status, E-Stop and A-Stop status, and is centered at the top of each DRIVER STATION.

The stack includes 2 identical ALLIANCE-colored ROBOT status LEDs above a third amber A-stop/E-stop LED. LED states are as follows:

- ROBOT status LEDs
  - Solid: indicates that the ROBOT is connected and enabled. This only happens during a MATCH.
  - Blinking: indicates that either the FMS is preset for the MATCH and the ROBOT is not connected yet, or it's during a MATCH and the corresponding ROBOT is BYPASSED, has lost connectivity, or the E-stop was pressed.
  - Off: indicates that the ROBOT is linked and DISABLED prior to the start of the MATCH. This light is also off, regardless of ROBOT connection status, after the MATCH has concluded.
- A-Stop/E-stop LED
  - Solid: the ROBOT is DISABLED due to a press of the team E-stop button, the FIELD E-stop button, or by the scorekeeper via the FMS.
  - Blinking: the ROBOT is DISABLED for the remainder of AUTO due to a press of the team A-Stop button.
  - Off: the ROBOT is not DISABLED by the FIELD.
- FMS hardware and wiring: mostly located below shelves in the 2 DRIVER STATIONS closer to the scoring table.

## 5.6.2 CORAL STATION

Figure 5-18 CORAL STATION



A CORAL STATION is an assembly through which HUMAN PLAYERS feed CORAL into the FIELD. There are 4 CORAL STATIONS, 1 in each corner of the FIELD connecting the guardrail to the ALLIANCE WALL. Each CORAL STATION has a 6 ft. 4 in. wide by 7 in. tall (~193 cm wide by ~18 cm tall) opening through which CORAL passes to the FIELD; the bottom of the opening is 3 ft. 1½ in. (~95 cm) from the carpet. A 55° sloped tunnel, called the CHUTE, leads to the opening in the CORAL STATION.

There are 2 stools available at events for DRIVE TEAMS to use. Each stool is 1 ft. 11 in. (~58 cm) wide by 1 ft. 1½ in. (~34 cm) deep, 6¼ in. (~16 cm) tall, and rated for 300 lbs. (~136 kg).

It is specially intended to allow individuals who are shorter, better sightlines onto the FIELD; however, this accommodation is available to anyone who has another physical disability that obstructs their view of the FIELD. Due to space constraints, stools are not allowed to be used in the PROCESSOR AREA.

Only 2 stools are available, and priority will be given to those with the biggest need. Teams should speak to the FTA before MATCHES begin to request that it is available for each of the team's MATCHES. Teams may also purchase their own ([Item Number: 779ac01stpm](#)) or bring an equivalent (e.g. not foldable and similar dimensions) version to the event to guarantee use for every match.

This stool is available at all events within the US & Canada and equivalents are available at international events. For questions, please connect with the local [Program Delivery Partner](#).

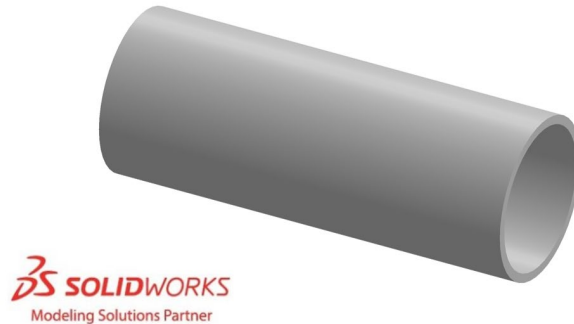
## 5.7 SCORING ELEMENTS

SCORING ELEMENTS are items that teams use to score additional points. There are 2 types of SCORING ELEMENTS used in REEFSCAPE: CORAL and ALGAE.



### 5.7.1 CORAL

Figure 5-19 CORAL



A CORAL is a 11  $\frac{7}{8}$  in. long (~30 cm) piece of 4 in. diameter Schedule 40 Cellular (Foam) Core PVC pipe. CORAL has a 4-in. (~102 mm) inside diameter and a 4½-in. (~11 cm) outside diameter. CORAL is available for purchase from AndyMark, [am-5601](#) or can be cut from longer lengths of 4 in. diameter Schedule 40 Cellular (Foam) Core PVC pipe.

Prior to Kickoff, CORAL was known as “Game Piece 1” and not available for pre-order prior to the season.

CORAL in the KOP and at events has a weight of between 1.1-1.8 lbs. (~0.5-0.8 kg) and has text marking along the length of the pipe that may vary in color.

Teams should be aware that CORAL and PVC pipe from different sources may have variances in color, markings, and weight.

CORAL undergoes wear and tear during a competition. Generally, a CORAL that still appears to look approximately like a CORAL is considered a CORAL for the purposes of rule evaluation and scoring, whether damaged or not. Small chunks of a CORAL are not considered a CORAL.

The edge of the CORAL may be rough or sharp. Teams should use caution when handling CORAL.

## 5.7.2 ALGAE

Figure 5-20: ALGAE



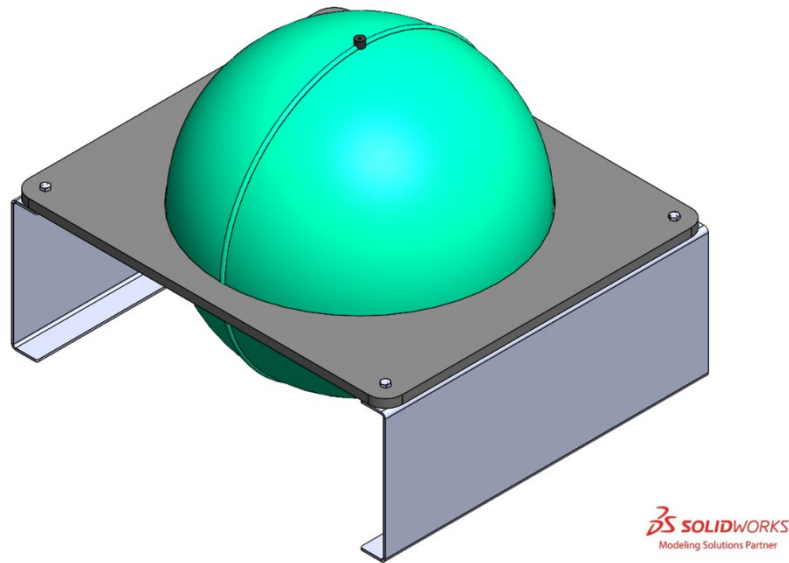
Each ALGAE is a 16.25 in. (~413 mm)  $\pm \frac{1}{4}$  in. (~6 mm) diameter rubber playground ball. The ball is custom made for *FIRST* by Baden Sports and sold by AndyMark [am-5602](#).

Prior to Kickoff, ALGAE was known as “Game Piece 2” and was available for pre-order prior to the season.

At events, ALGAE will be inflated using a sizing gauge so that the diameter measures between 16 in. (~406 mm) and 16.5 in. (~419 mm). The ALGAE and the jig will both be placed on a flat surface, and the ALGAE will be inflated with the valve sticking up vertically so that the seam is perpendicular to the large hole in the jig. It will be inflated until the two opposite points along the seam are contacting the top edge of the hole in the jig, which is 16.25 in. (~413 mm) diameter.

The tolerances to which ALGAE are manufactured allow for variances in diameter, wall thickness, weight distribution and overall weight. They may not always be uniformly spherical, roll straight, or bounce as expected.

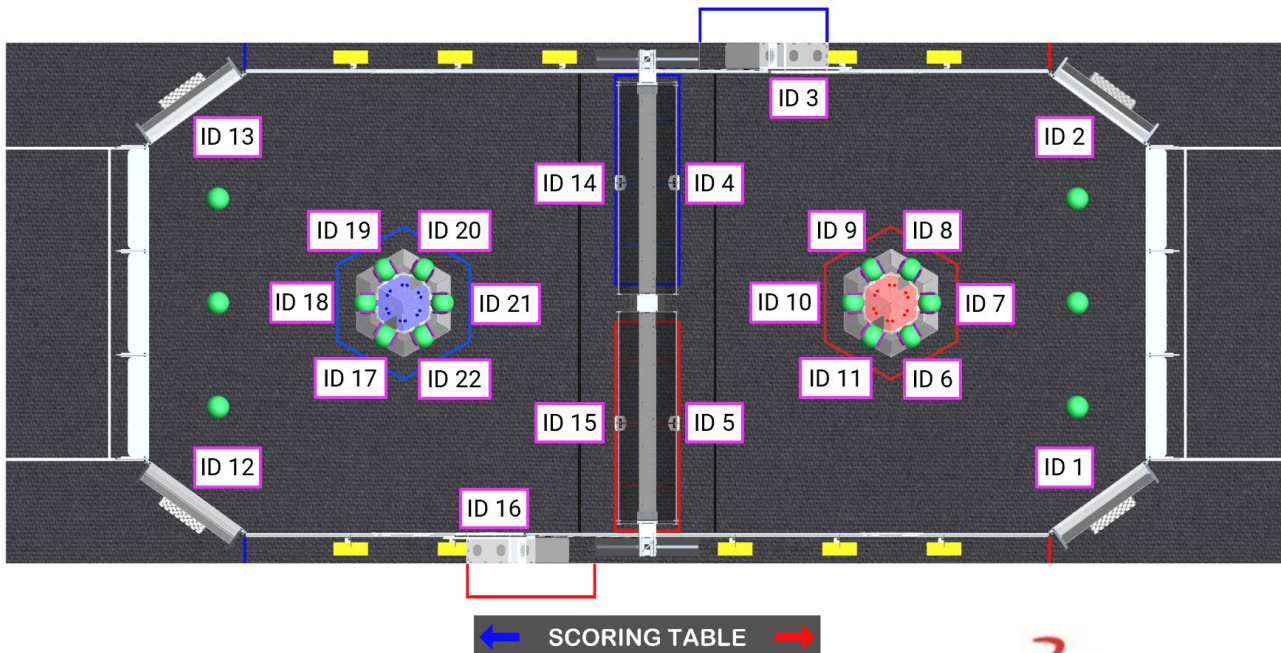
Figure 5-21 ALGAE Inflation Jig



## 5.8 AprilTags

AprilTags are 8 $\frac{1}{8}$  in. (~21 cm) square targets located above CAGES, PROCESSORS, CORAL STATIONS and on REEFS. There are 22 unique markers on the FIELD, positioned as shown in [Figure 5-22](#).

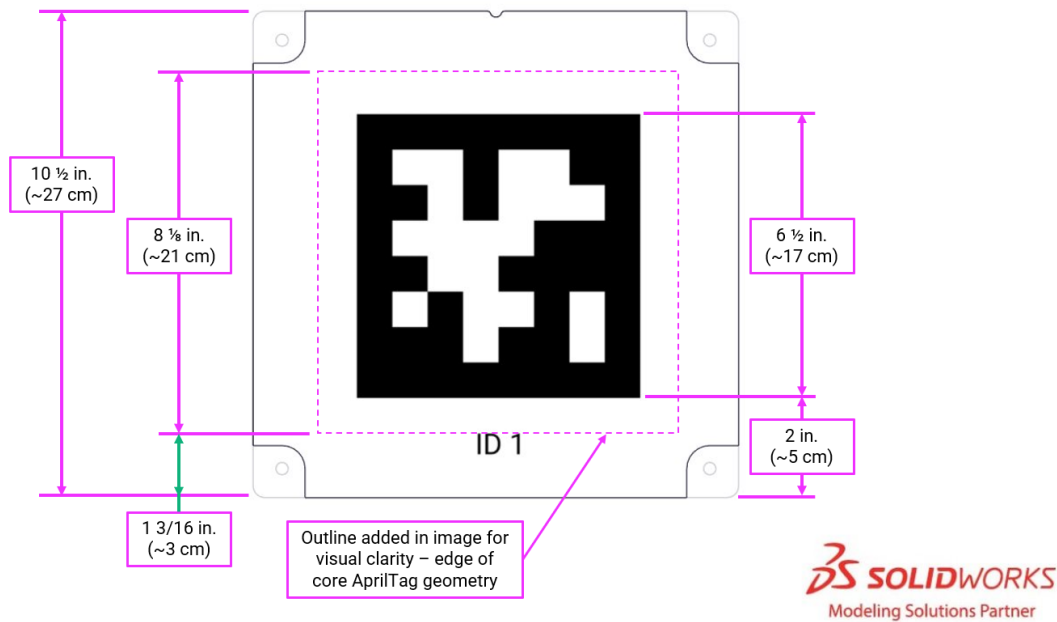
Figure 5-22 AprilTag locations





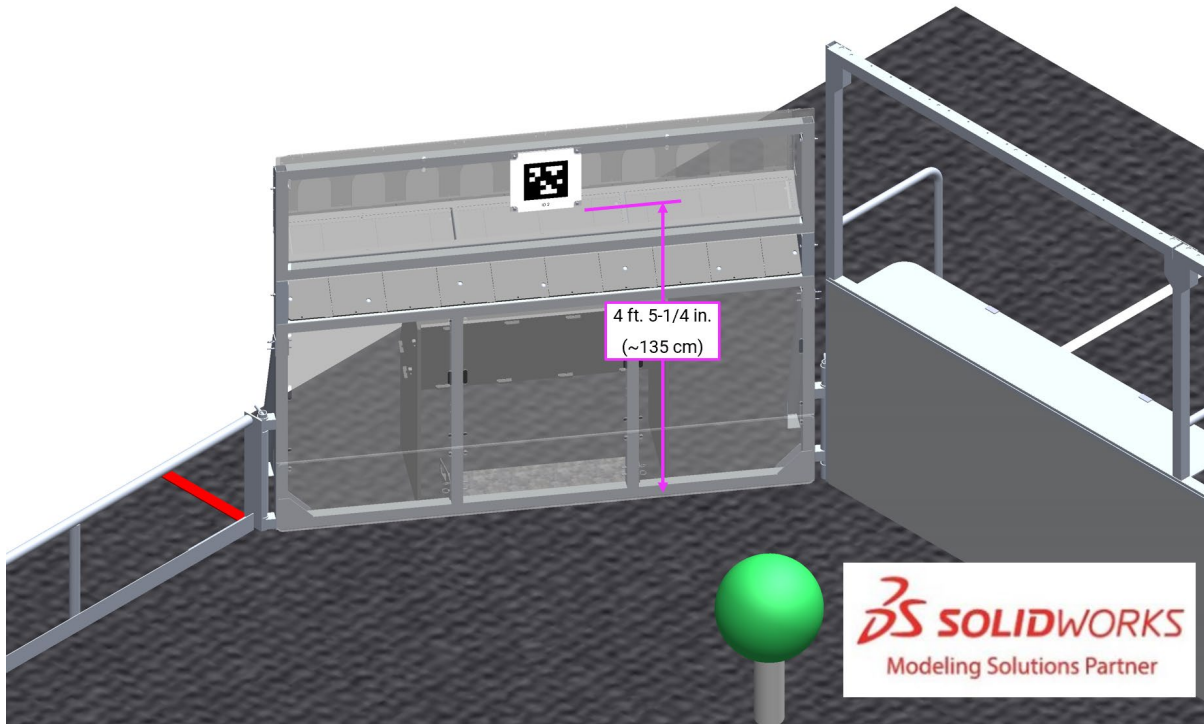
All markers are from the 36h11 tag family, IDs 1-22. All AprilTags are mounted to and centered on a 10½ in. (~27 cm) square polycarbonate panel. Each marker has an identifying text label. If AprilTags experience wear and marking during MATCHES, they are repaired with gaffers tape.

Figure 5-23 AprilTag sizing



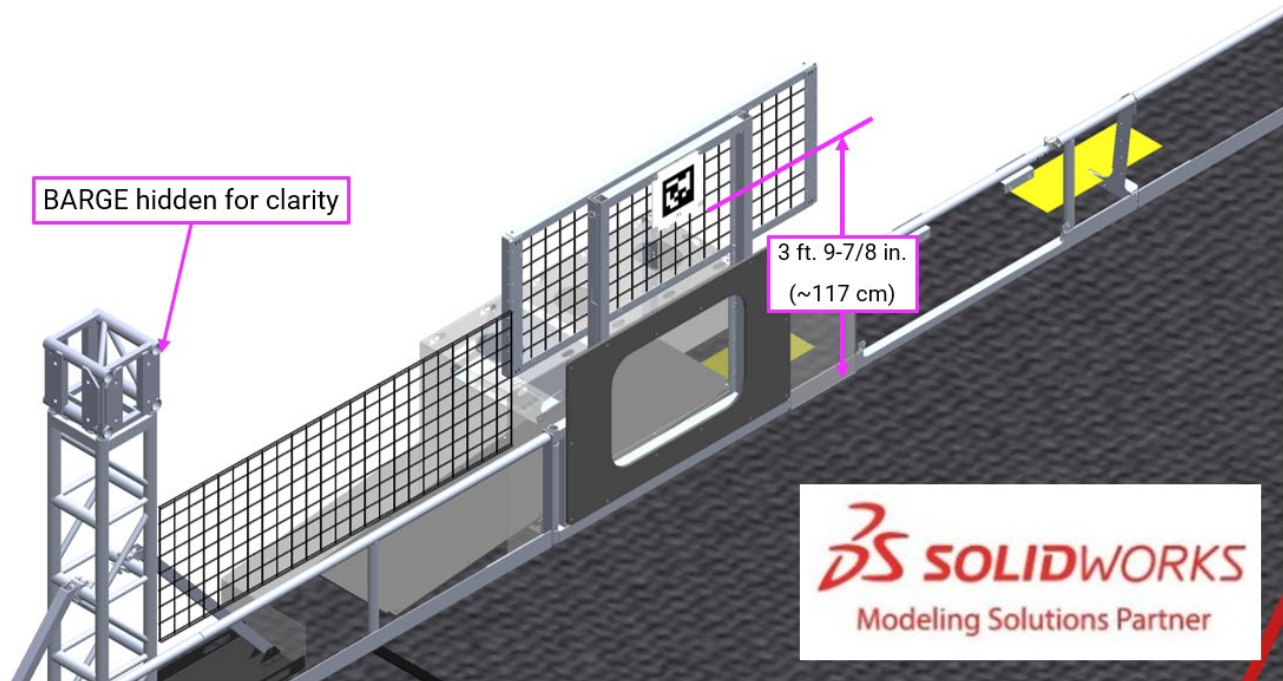
CORAL STATION AprilTags (IDs 1, 2, 12, and 13) are mounted to the CORAL STATION. The bottom of each tag's panel is 4 ft. 5¼ in. (~135 cm) above the carpet and centered on the CORAL STATION.

Figure 5-24: CORAL STATION AprilTags



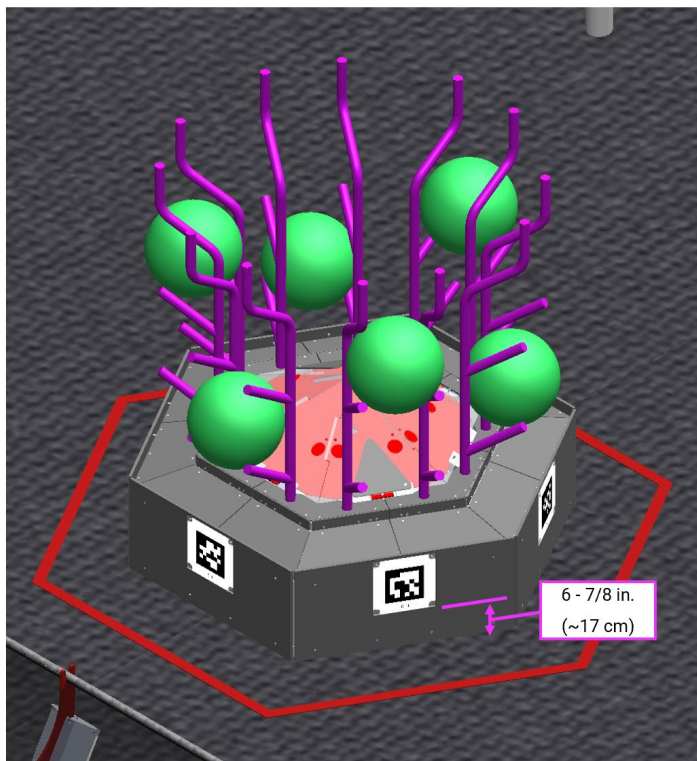
PROCESSOR AprilTag panels (IDs 3 and 16) are 3 ft. 9⅞ in. (~117 cm) above the carpet and centered horizontally above the opening in the PROCESSOR WALL.

Figure 5-25: PROCESSOR AprilTags



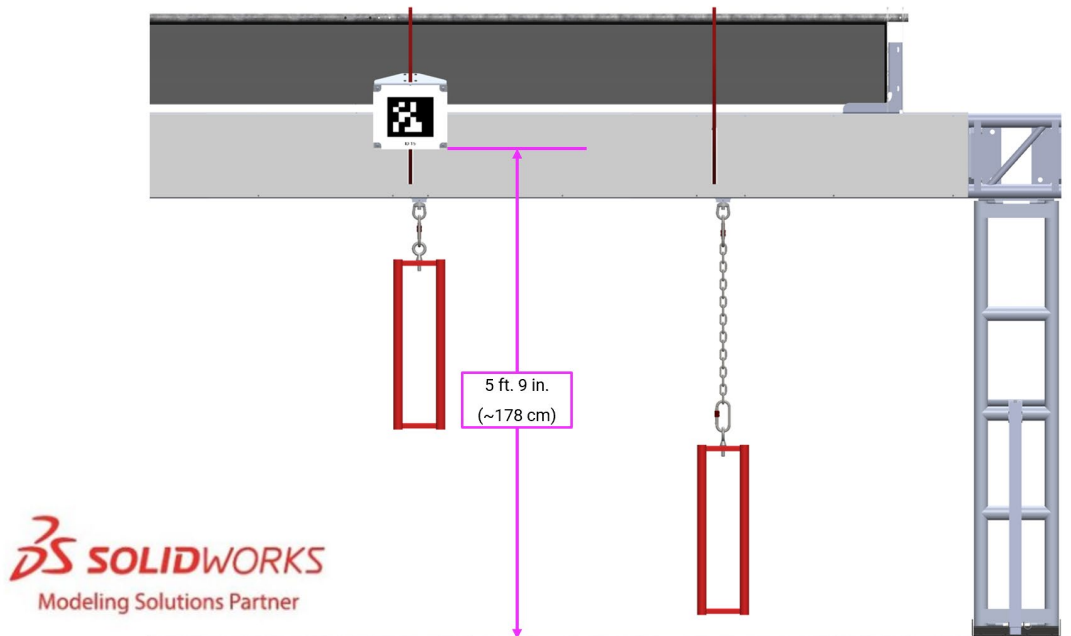
REEF AprilTag plates (IDs 6-11 and 17-22) are 6 $\frac{7}{8}$  in. (~17 cm) above the carpet and centered horizontally on each of the faces REEF.

Figure 5-26: REEF AprilTags



BARGE AprilTag plates (IDs 4, 5, 14, 15) are 5 ft. 9 in. (~178 cm) above the carpet, approximately centered above the middle CAGE, and angled 30° from vertical.

Figure 5-27: BARGE AprilTags



For further marker locating information please refer to the [2025 ARENA Layout and Marking Diagram](#). Printable versions of the markers are available on the [2025 Playing FIELD webpage](#).

## 5.9 The FIELD Management System

The FIELD Management System (FMS) is all the electronics responsible for sensing and controlling the *FIRST* Robotics Competition FIELD. The FMS encompasses all FIELD electronics, including computers, REFEREE touchscreens, the wireless access point, sensors, stack lights, A-Stops and E-Stops, etc.

When a DRIVE TEAM connects the Ethernet cable from their assigned DRIVER STATION to their OPERATOR CONSOLE, the Driver Station Software on the OPERATOR CONSOLE computer communicates with FMS. Once connected, the open ports available are described in [Table 8-5](#).

Note that ROBOT code cannot be deployed while connected to the FMS. Additional information about the FMS may be found in the [FMS Whitepaper](#).

The FMS alerts participants to milestones in the MATCH using audio cues detailed in [Table 5-1](#). Please note that audio cues are intended as a courtesy to participants and not intended as official MATCH markers. If there is a discrepancy between an audio cue and the FIELD timers, the FIELD timers are the authority.

Table 5-1 Audio cues

Event	Timer Value	Audio Cue
<b>MATCH start</b>	0:15 (for AUTO)	"Cavalry Charge"
<b>AUTO ends</b>	0:00 (for AUTO)	"Buzzer"
<b>TELEOP begins</b>	2:15	"3 Bells"



Event	Timer Value	Audio Cue
<b>Final 20 seconds</b>	0:20	"Submarine Sonar Ping"
<b>MATCH end</b>	0:00	"Buzzer"
<b>MATCH stopped</b>	n/a	"Foghorn"

## 5.10 FIELD STAFF

FIELD STAFF are responsible for making sure the MATCHES are cycled through efficiently, fairly, safely, and with a spirit of cooperation, Gracious Professionalism, and generosity of spirit. FIELD STAFF roles are filled by volunteers from the community who prepare for the event with thorough training and certification. There are 3 FIELD-side key volunteer roles with whom teams should be familiar and are encouraged to use as resources to make their event experience valuable (in whatever way the team defines "valuable").

- Head REFEREE – trains, directs, and supervises REFEREES. They oversee all scoring processes and procedures in collaboration with the *FIRST* Technical Advisor (FTA). They interact with STUDENTS, volunteers, and contracted/*FIRST* staff. The Head REFEREE is positioned between the FIELD and the scoring table and wears a yellow shirt. The Head REFEREE has final authority for decisions regarding MATCH scores, penalties, and YELLOW and RED CARD assignments. For additional details, please refer to the [Head REFEREE role description](#).
- *FIRST* Technical Advisor (FTA) - ensures events run smoothly, safely, and in accordance with *FIRST* requirements. The FTA collaborates with *FIRST* staff, event staff, and other event volunteers in many different areas at events. The FTA is the liaison between *FIRST* HQ and the event for all things related to the FIELD, ROBOTS, and game, acts as a team advocate for all teams competing at the event and is a major point of escalation and conflict resolution for the event. For additional details, please refer to the [FTA role description](#).
- FIELD Supervisor - directs activity on the FIELD to ensure efficient execution of the MATCHES, pacing of the event, and smooth flow of MATCH play. FIELD Supervisors are responsible for ensuring the FIELD is intact and lead FIELD Reset teams, who are responsible for resetting the FIELD after each MATCH in preparation for the subsequent MATCH. For additional details, please refer to the [FIELD Supervisor role description](#).

