

Team Update 12

General

Field Perimeter Variances

A variance has been discovered where the location of the PROCESSOR, other field elements, and corresponding AprilTags vary depending on which of the two field perimeter - Welded or AndyMark - is used. The [Field Layout and Markings Diagram](#) and the [Field Drawings](#) have been updated to include the AprilTag Coordinates when using an AndyMark perimeter. The [WPILib AprilTag Map](#) has also changed to reflect the updated AprilTag Coordinates and allow teams to choose a map based on which field type they will be using at their events. More details regarding the variance, and tools can be found below.

Dimensional Differences

The PROCESSOR was designed to mount to both types of field perimeter and maintain the location of the AprilTag relative to the opening. When used with AndyMark field perimeter the PROCESSOR opening and AprilTag locations (Tags 3, 16) move in the "X" direction approximately 2.7 inches (~6.9 cm).

The CORAL STATION has a connection to the AndyMark field perimeter which results in a variance in the overall field width and CORAL STATION AprilTags (Tags 1, 2, 12, 13) in both the X and Y dimensions. Due to the resulting width differences, other field elements have slight variances in their AprilTag Coordinate locations as well. All AprilTag Coordinates for both field borders can be found in the [Field Layout and Markings Diagram](#). Note that while we are providing updated AprilTag Coordinates to reflect the differences between each field type, in many cases field setup variation and movement during the event will exceed the differences between these two maps.

WPILib Updates

[WPILib 2025.3.1](#) contains updated 2025 AprilTag maps and a map naming change. This is a breaking change that will encourage teams to select one of the two new maps, one for welded field perimeter and a new one for AndyMark field perimeter. Teams can consult the following tables for information on which field type is in use in their area district and regional events. All fields at the FIRST Championship will use a welded field perimeter.

Table 1 District Field Types

District	Field Type
FIRST Chesapeake	AndyMark
<i>FIRST</i> in Michigan	Welded
<i>FIRST</i> in Texas	AndyMark
<i>FIRST</i> Indiana Robotics	AndyMark
<i>FIRST</i> Israel	Welded
<i>FIRST</i> Mid-Atlantic	Welded
<i>FIRST</i> North Carolina	AndyMark
<i>FIRST</i> South Carolina	Welded

District	Field Type
NE FIRST	AndyMark
Ontario	Welded
Pacific Northwest	Welded
Peachtree	Welded

Table 2 Regional Field Types

Regional Location	Field Type
Australia	Welded
Brazil	AndyMark
Canada	Welded
China	AndyMark
Chinese Taipei	AndyMark
Mexico	AndyMark
Türkiye	AndyMark
United States	Welded

Using the WPICal Tool

Another tool to help account for variances in AprilTag locations is the new [WPILib tool, WPICal](#). This tool is designed to help measure the real-world position of the AprilTags and produce an updated map file that can be referenced by a coprocessor or robot code. Teams may wish to familiarize themselves with this software prior to their events if their strategy relies on accurate global AprilTag placement (as opposed to the local placement of AprilTags relative to the field elements they are mounted to).

Game Manual

8.6 Power Distribution

R610 *1 breaker/fuse per circuit. All circuits, with the exceptions of those listed in [R615](#) and [R617](#), must connect to, and have power sourced solely by, a single protected 12VDC WAGO connector pair (i.e. the load terminals, as shown in [Figure 8-8](#)) of the PDP/PDP2.0/PDH, not the M6 cap screws.