LIMNTECH SCIENTIFIC, INC.

User Manual

LifeMark®-100 Recording and Layout Guide

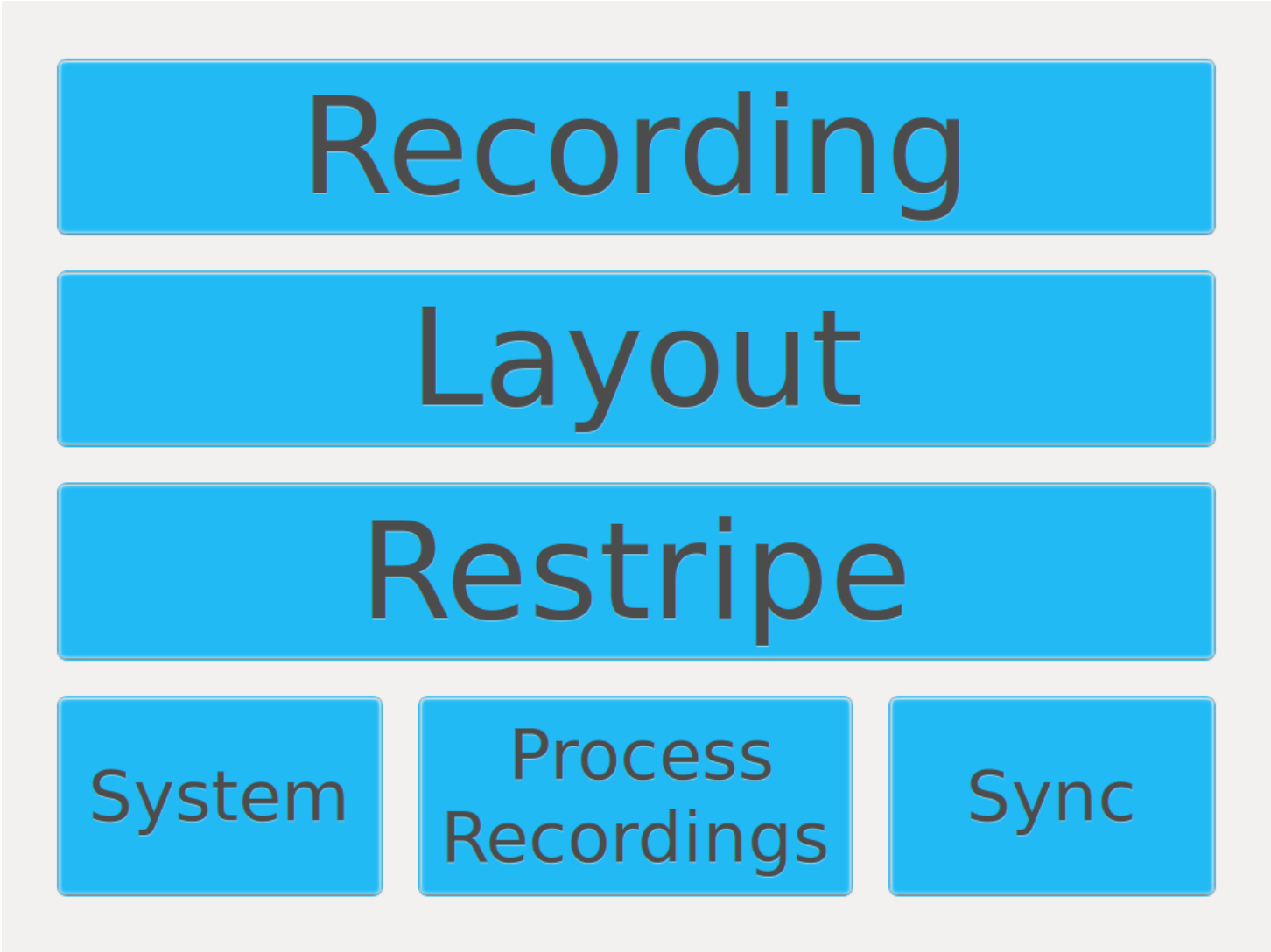
Table of Contents

Section One

Recording User Interface

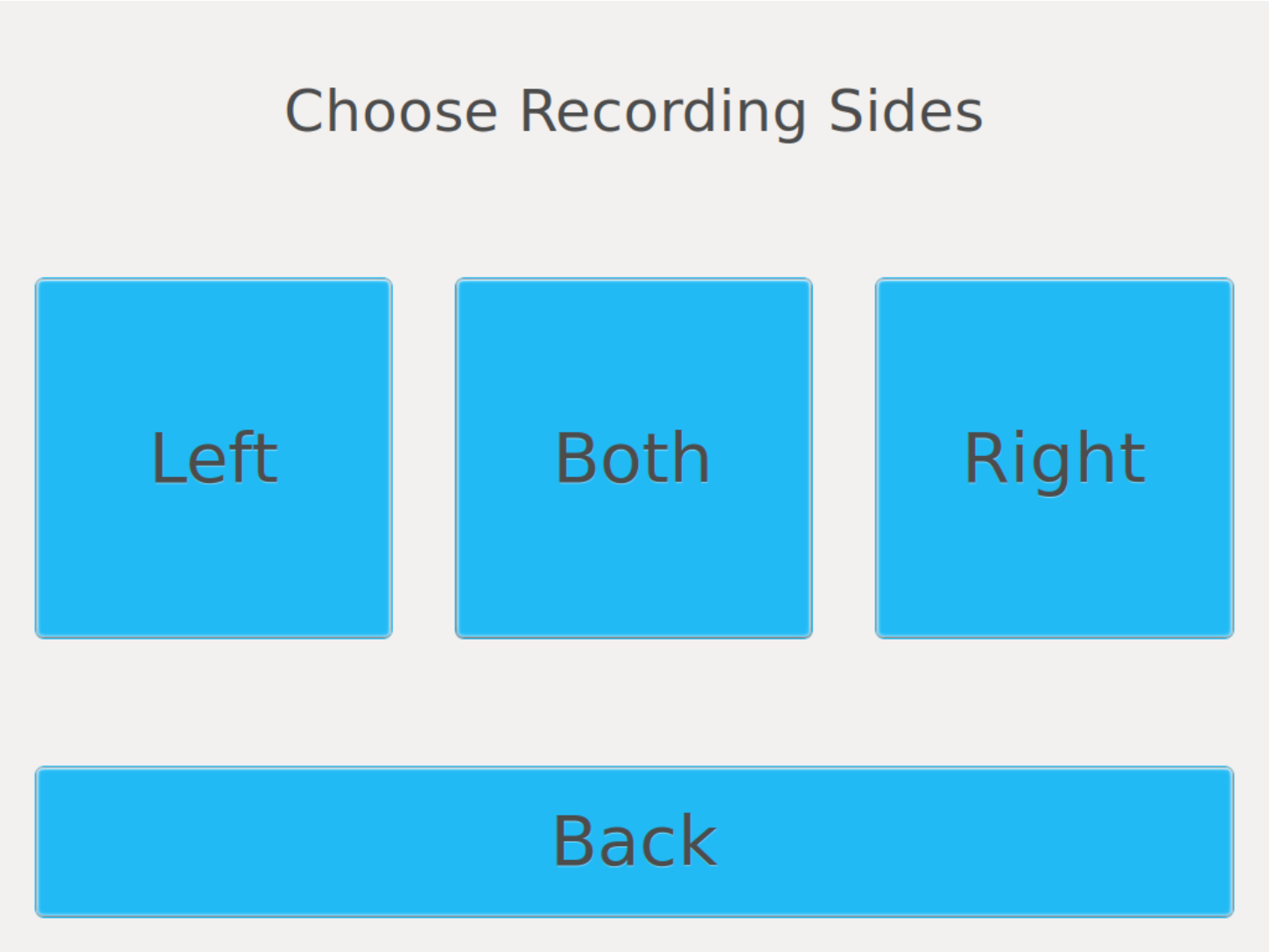
Main Menu

- Select the **Recording** button to begin.
- Note: The **Restripe** button will only be present in LifeMark®-400 systems.



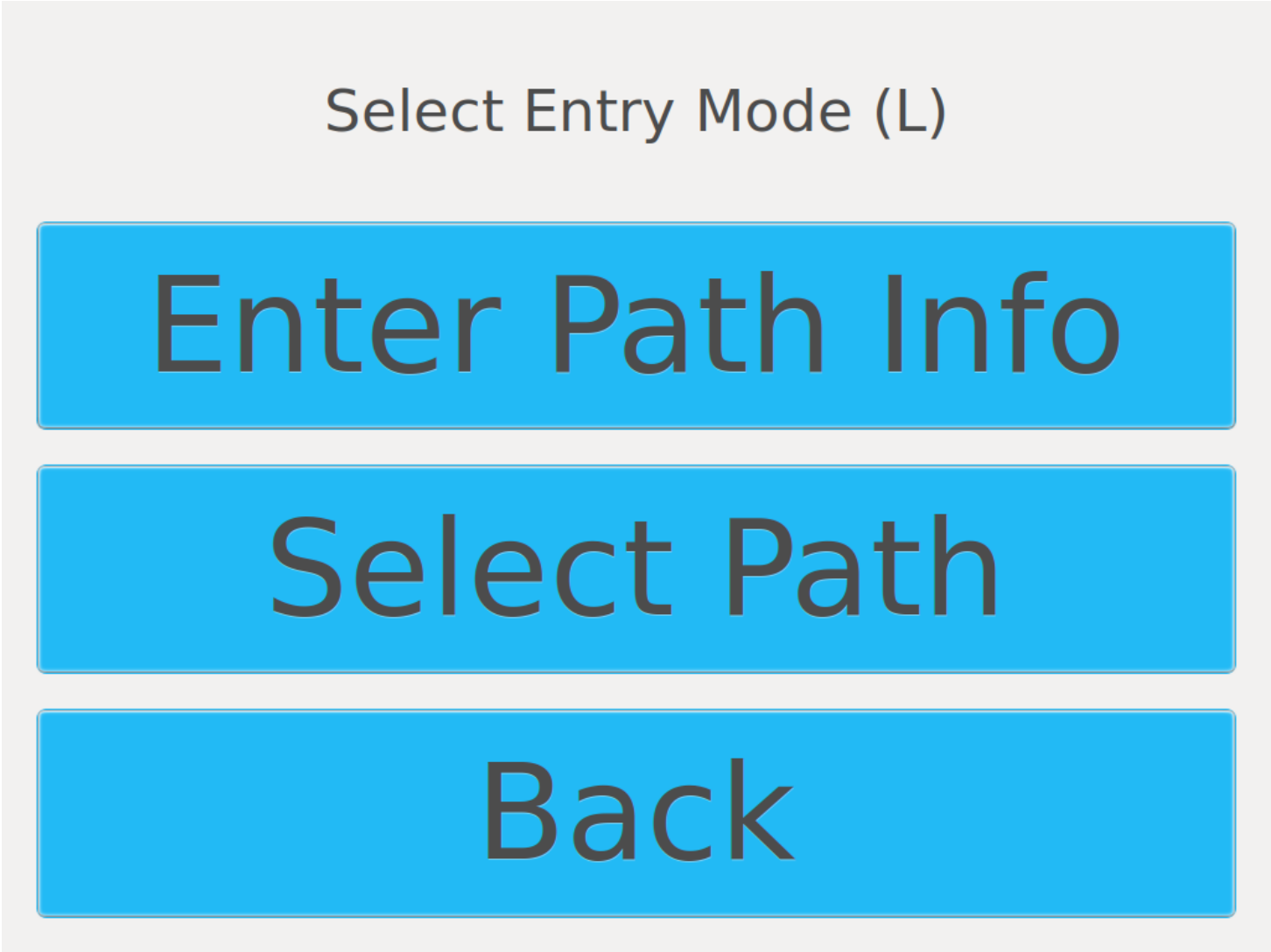
Recording Selection

- Select which carriages you would like to use for Layout.
- The following slides demonstrate the screens for a **Left Camera Recording**.



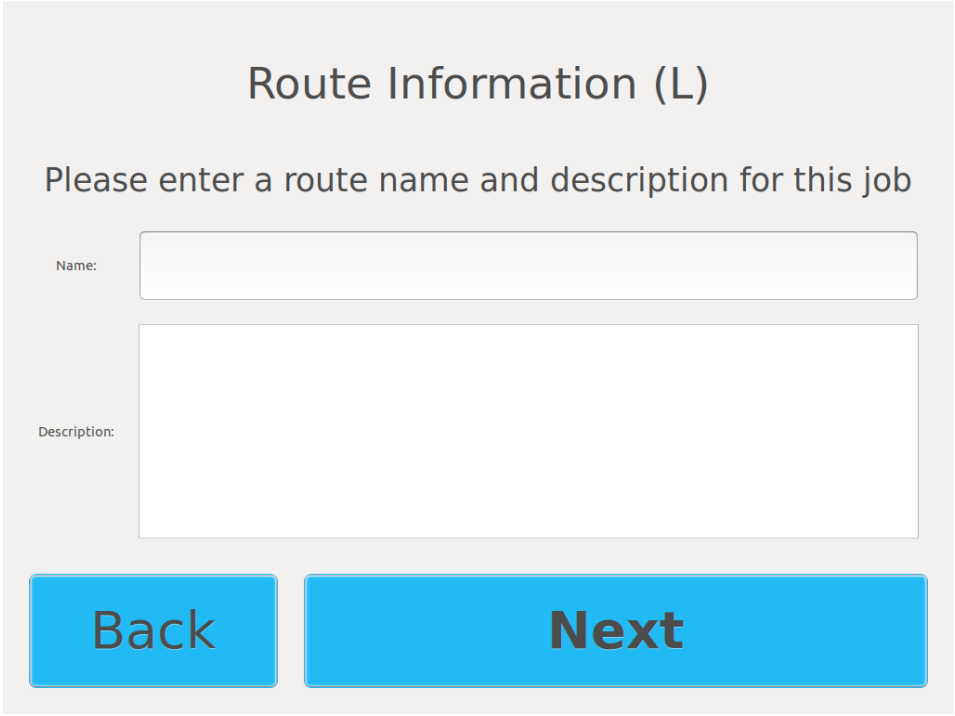
Entering Recording Information

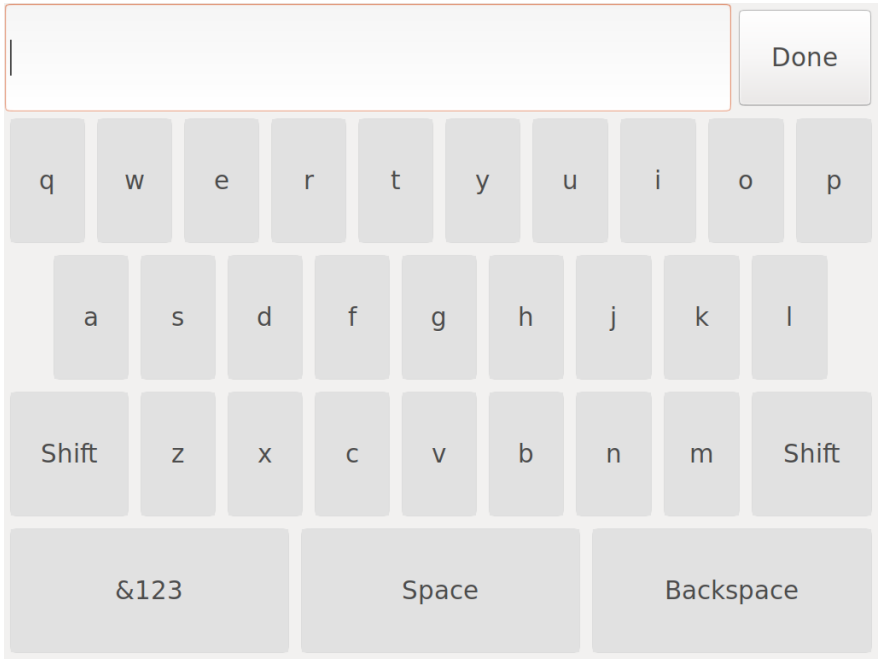
- Select the **Enter Path Info** button.



Entering Recording Information

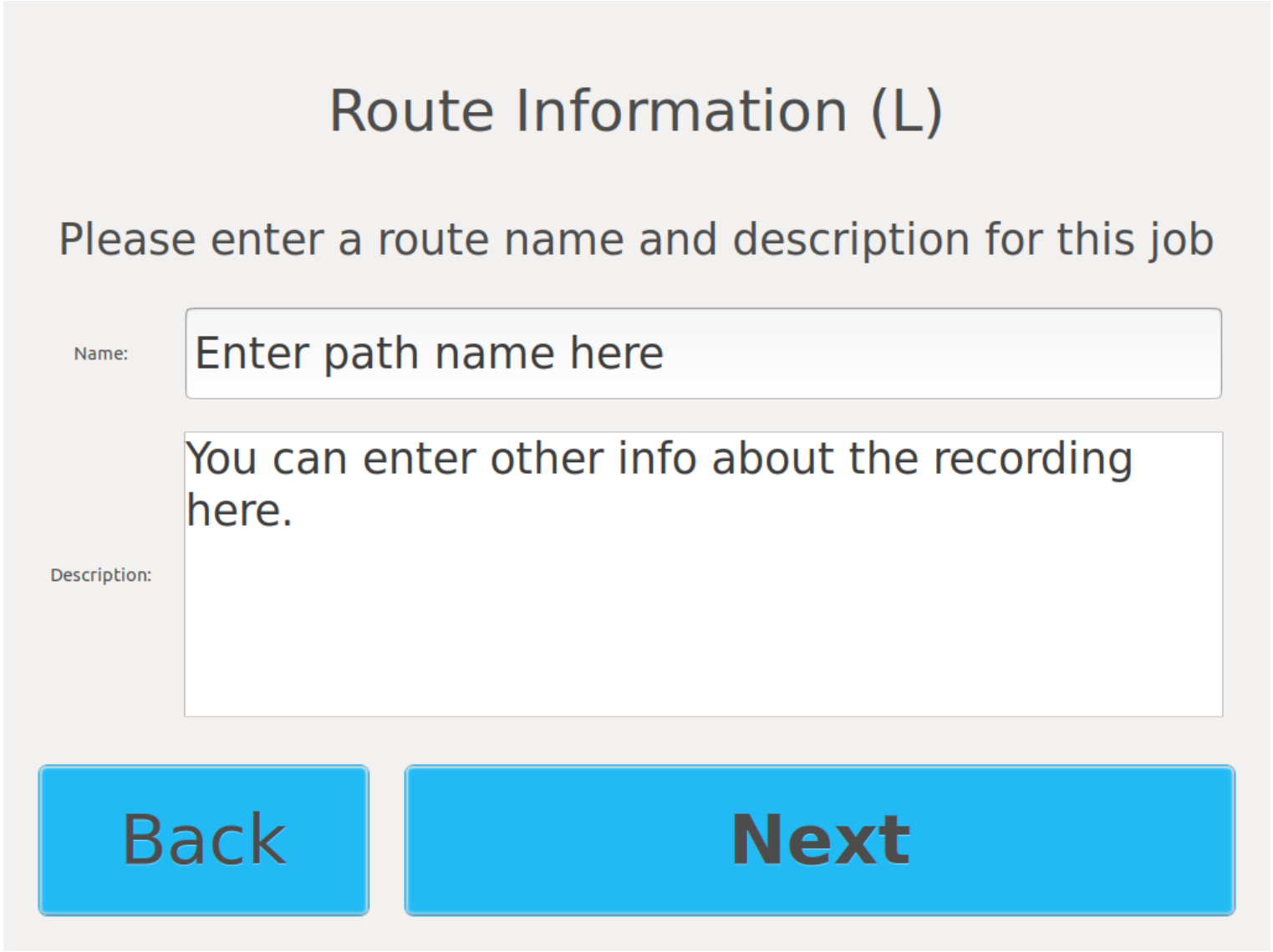
- Here is where you will enter the important information regarding the roadway you will be recording.
- Once you click on the box next to the name a keyboard window will open. Use these keys to enter the information.
- Once all info is entered click **Next**





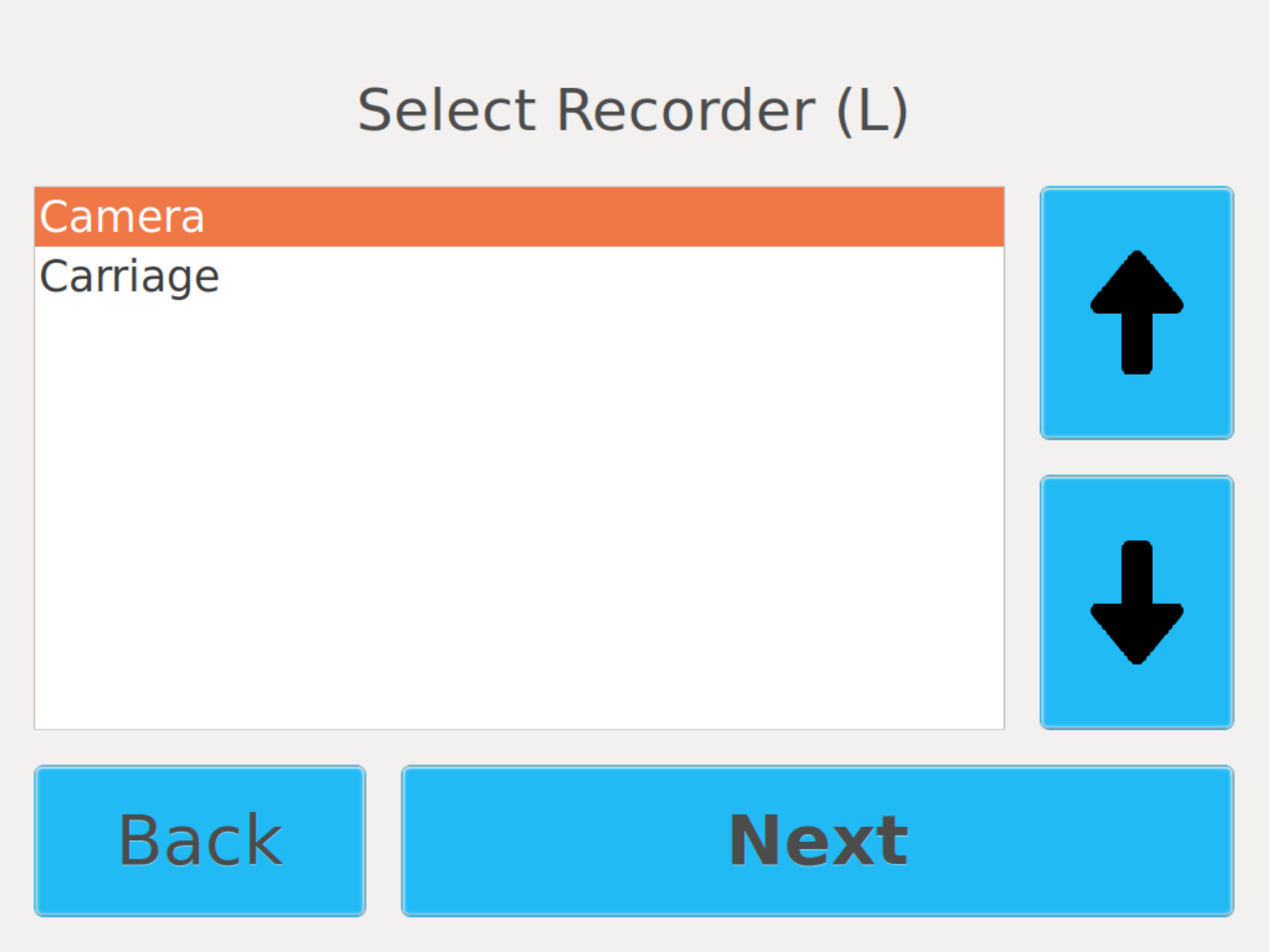
Entering Recording Information

- If further info is warranted, click on the Description Box and the keyboard window will pop up.
- Type in the info and click on **Next**
- If satisfied with all entered info, click **Next**



Recorder Selection

- Pick whether you will be using the
  - **Camera**
  - **Carriage**

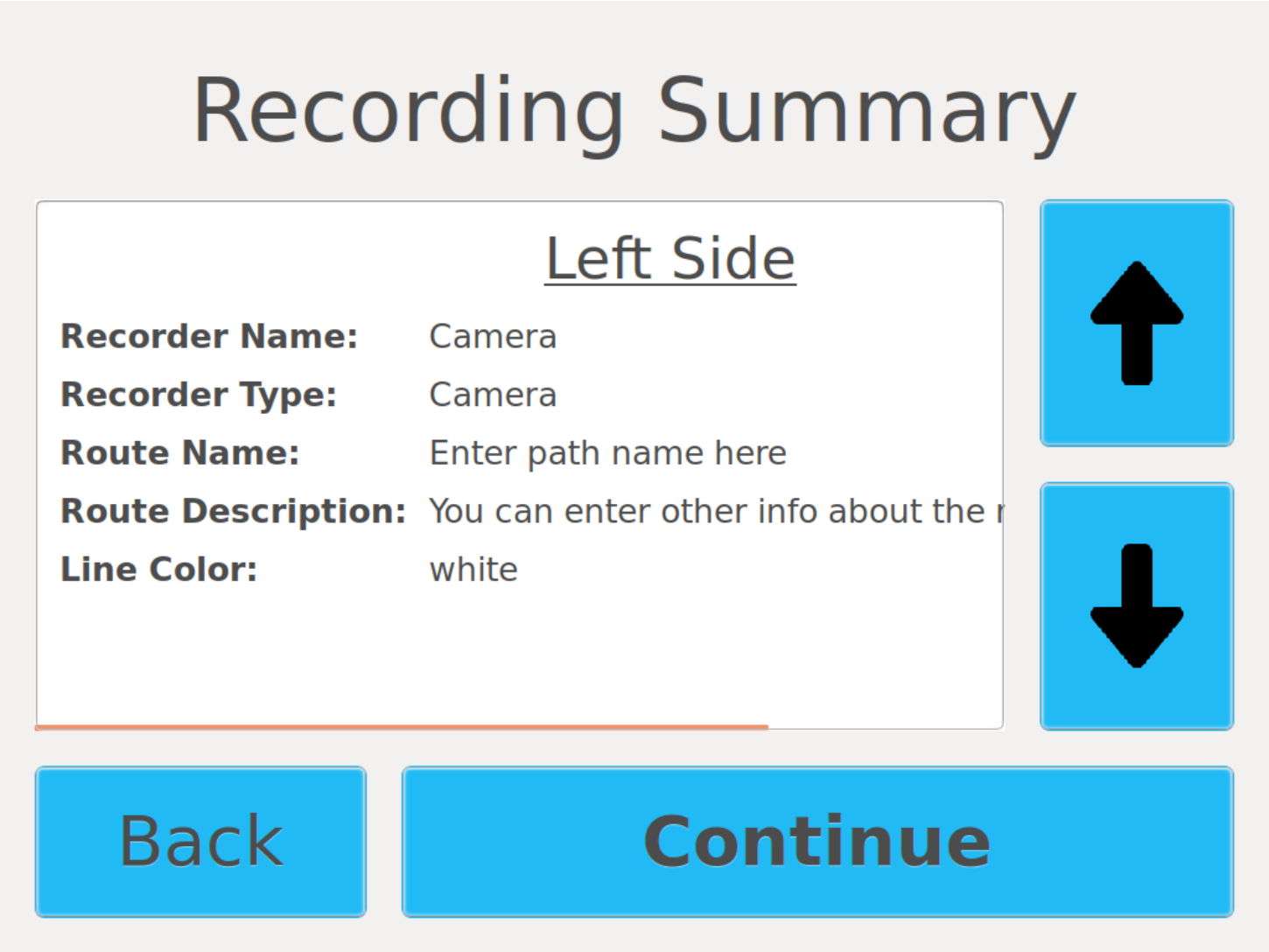


Color Selection

- Select the color you will be recording

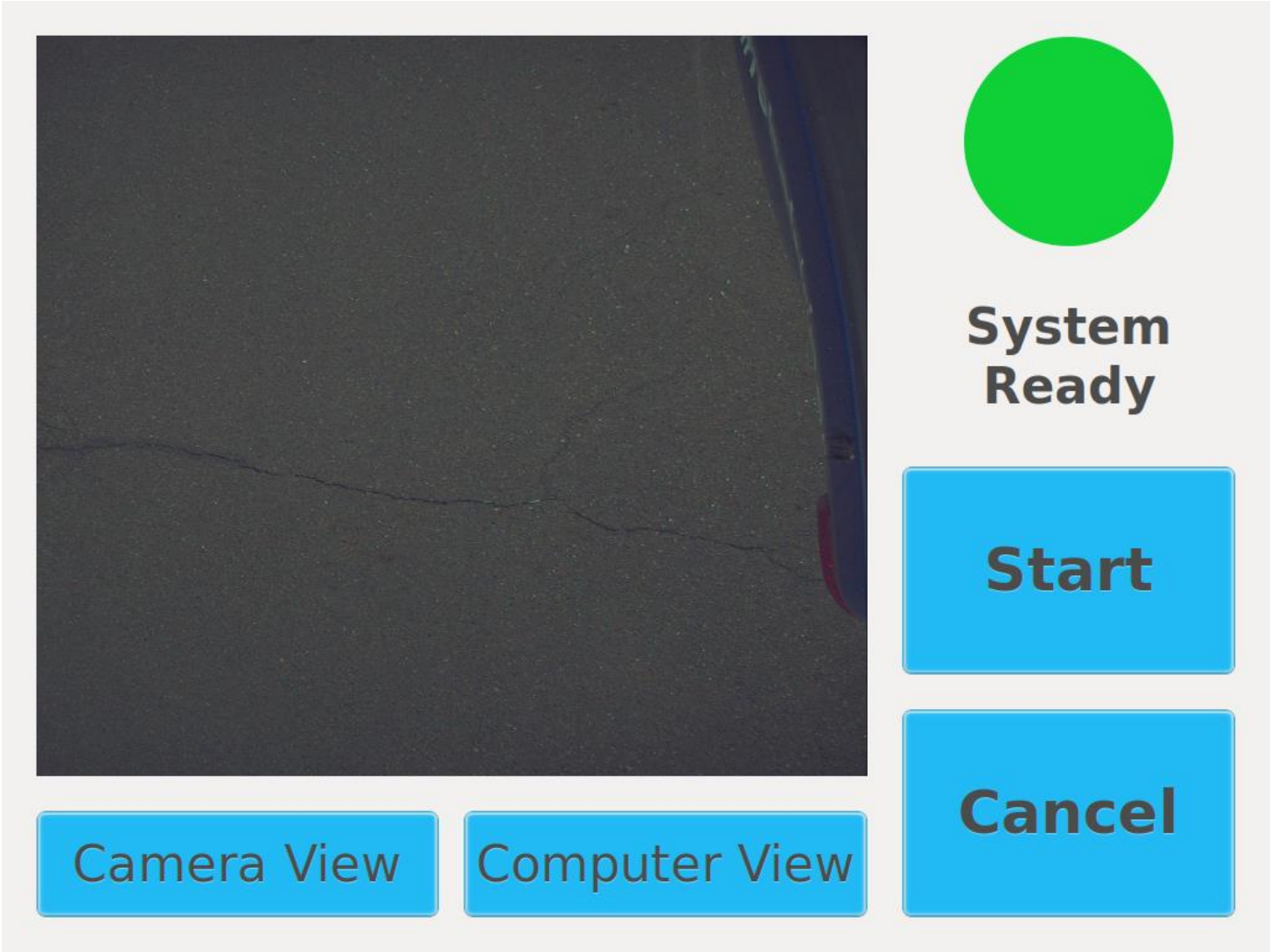
Recording Summary

- This screen confirms the choices you made on the previous screens.
- If a change is needed click **Back button** until you reach the screen where you can change the information.
- Otherwise click the **Continue button**



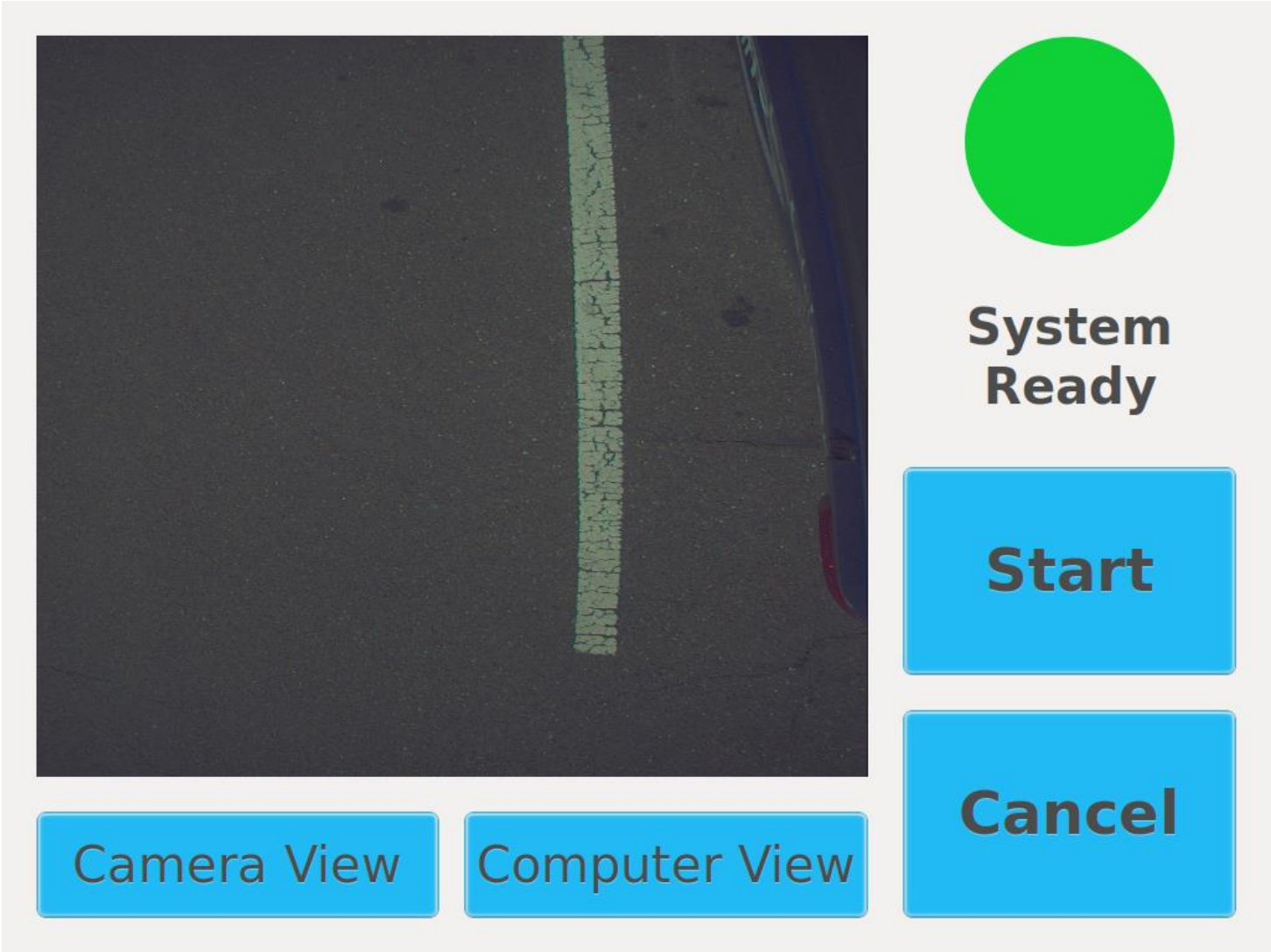
Recording

- This is the screen that will come up when you hit **Continue** on the previous screen
- Align the truck with the line to be recorded and press **Start**



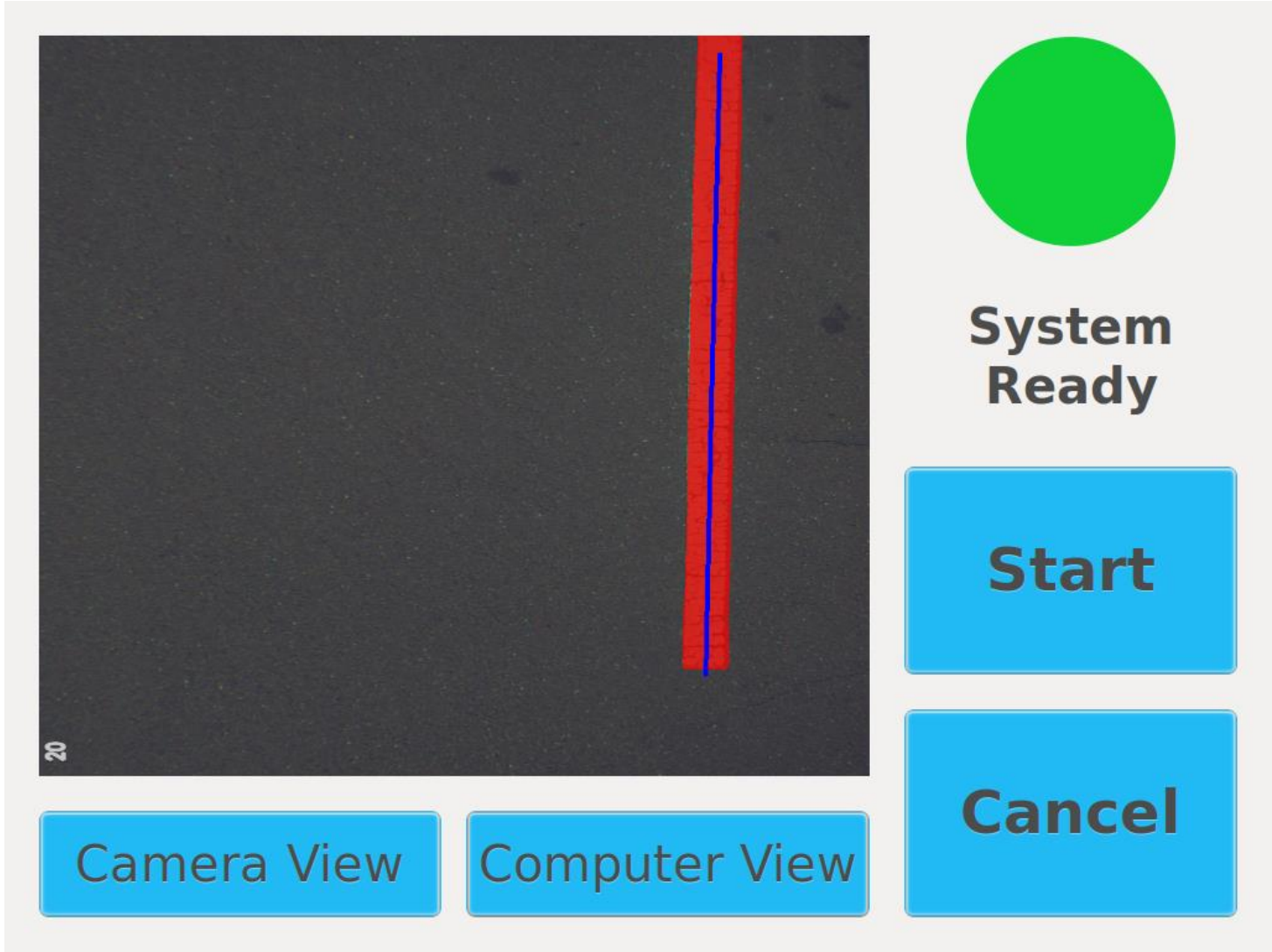
Recording (continued)

- You will start out with the Camera view when recording with the Camera.



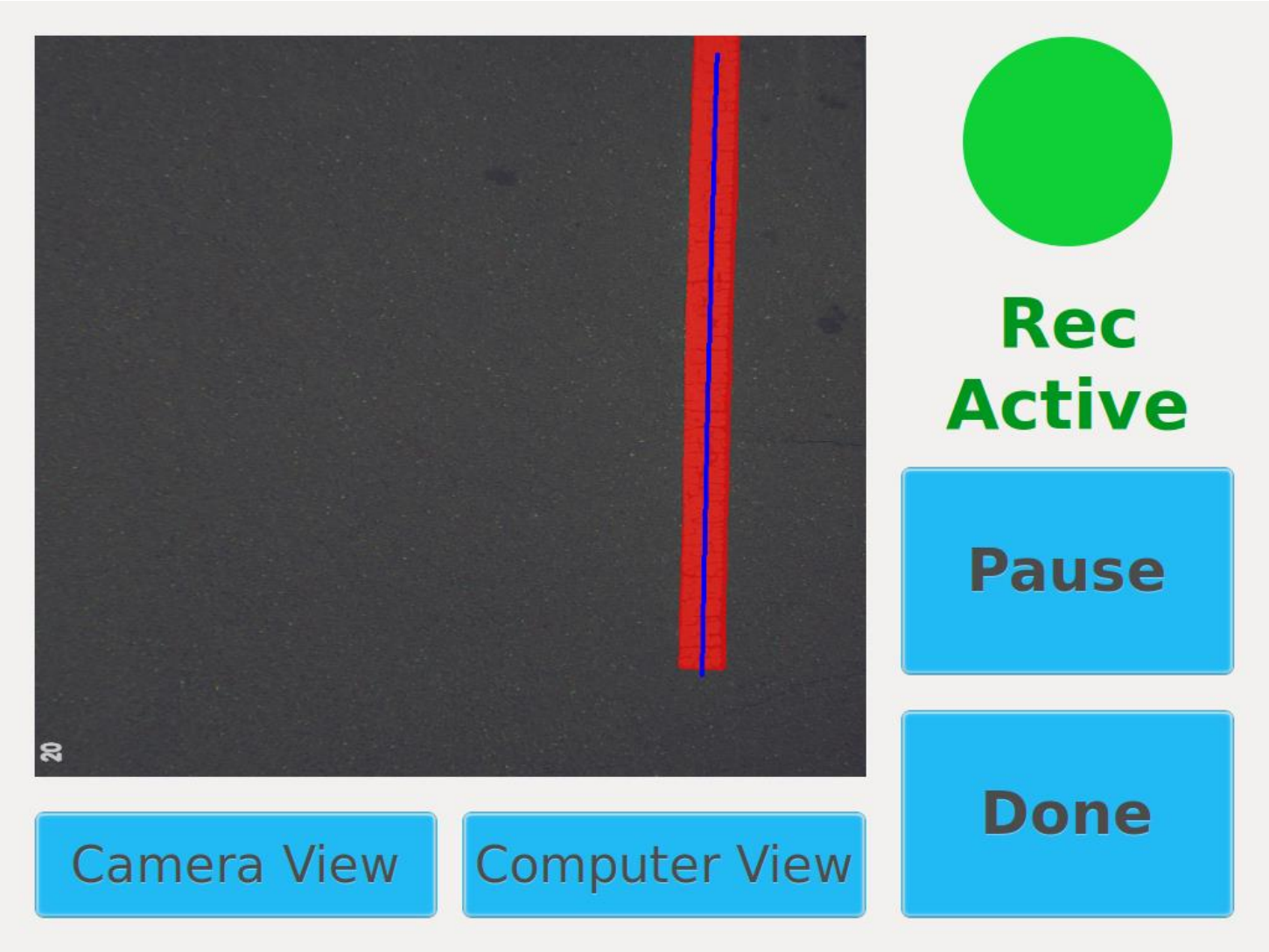
Recording (continued)

- If you click on **Computer View** this is what you will see.
- **White lines are Red with a thin Blue line in the middle**
- **Yellow Lines are Green with a thin Blue line in the middle.**



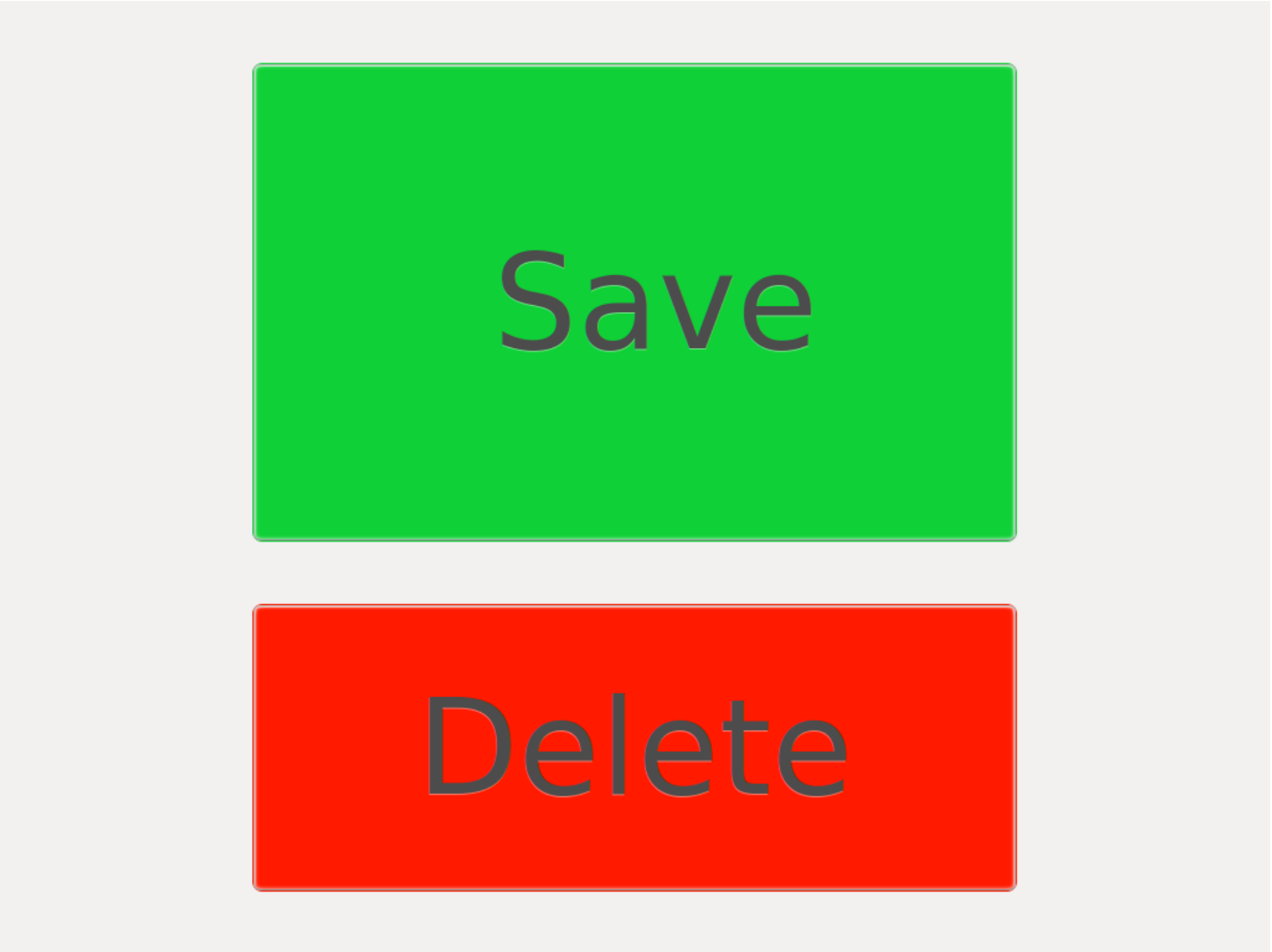
Recording (continued)

- Once you hit **Start** the recording will begin until you hit either:
  - **Pause** which will temporarily stop the recording. You can then hit **Start** again to resume recording**.**
  - **Done** which will end the recording.



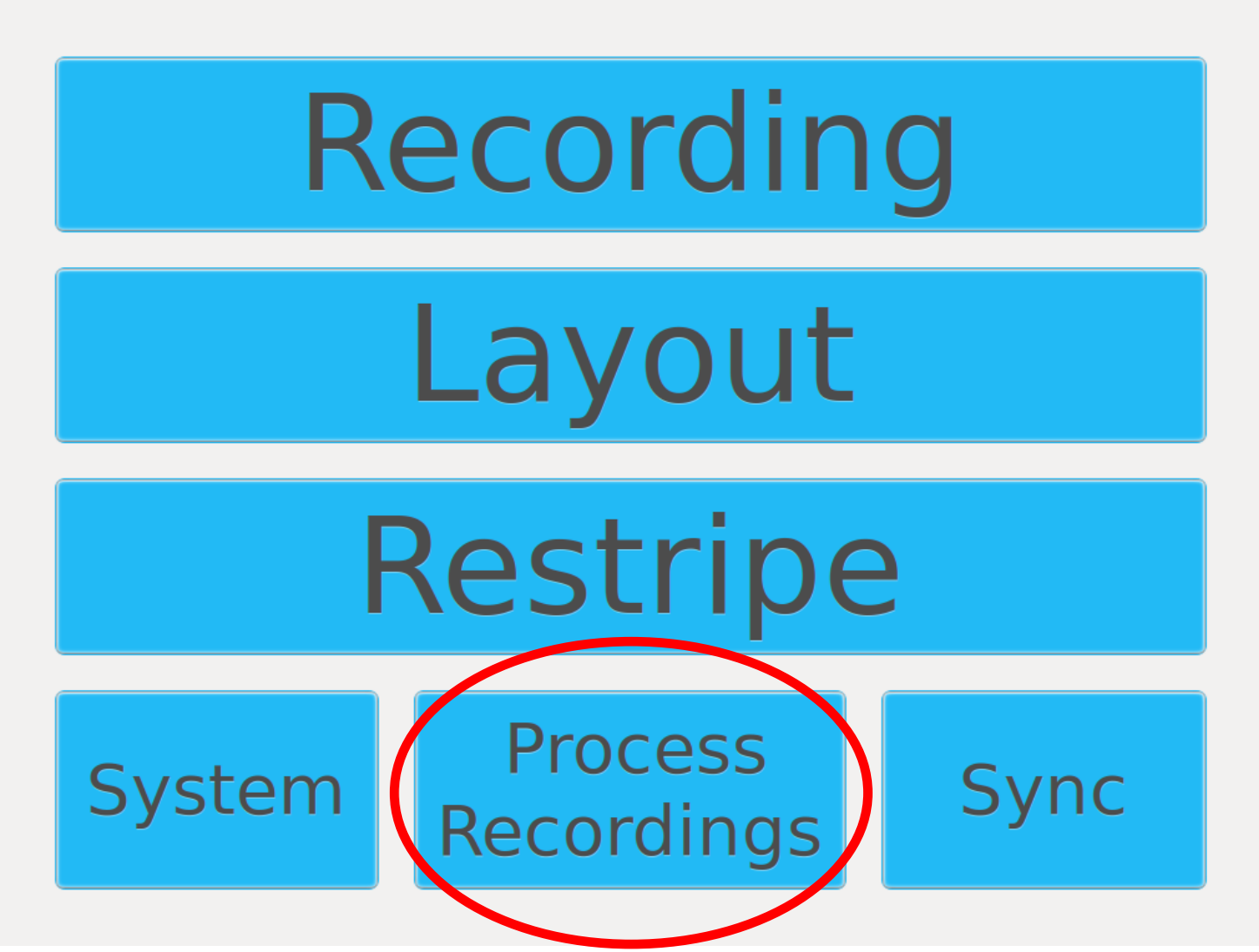
Recording (continued)

- Once you click **Done** this is the screen you will see.
- Click **Save** to keep the recording you collected and return to the Main Menu.



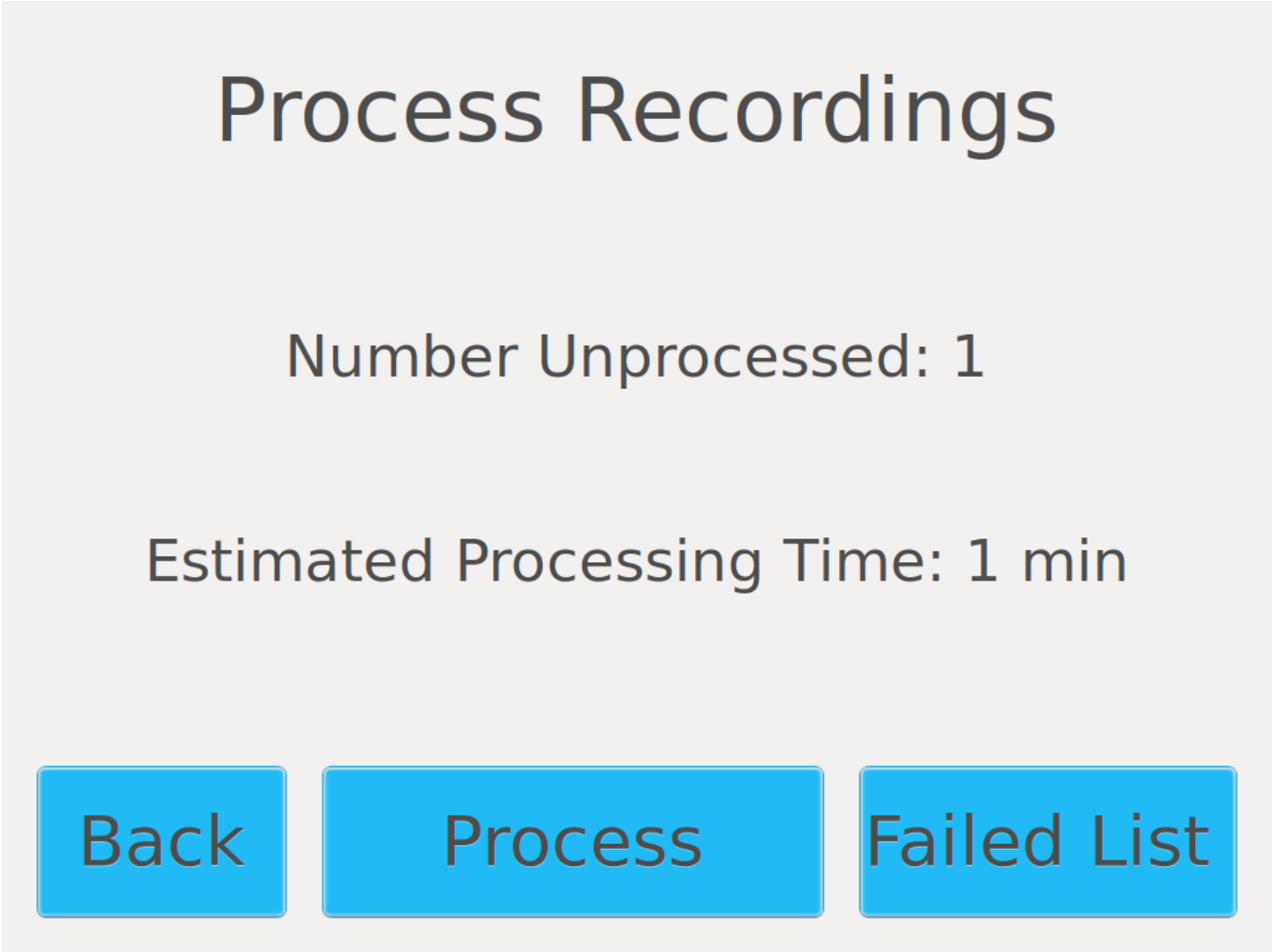
Process Recordings

- Select the **Process Recordings** button to convert your recordings into virtual roadway marking paths that you can lay out on the next screen.



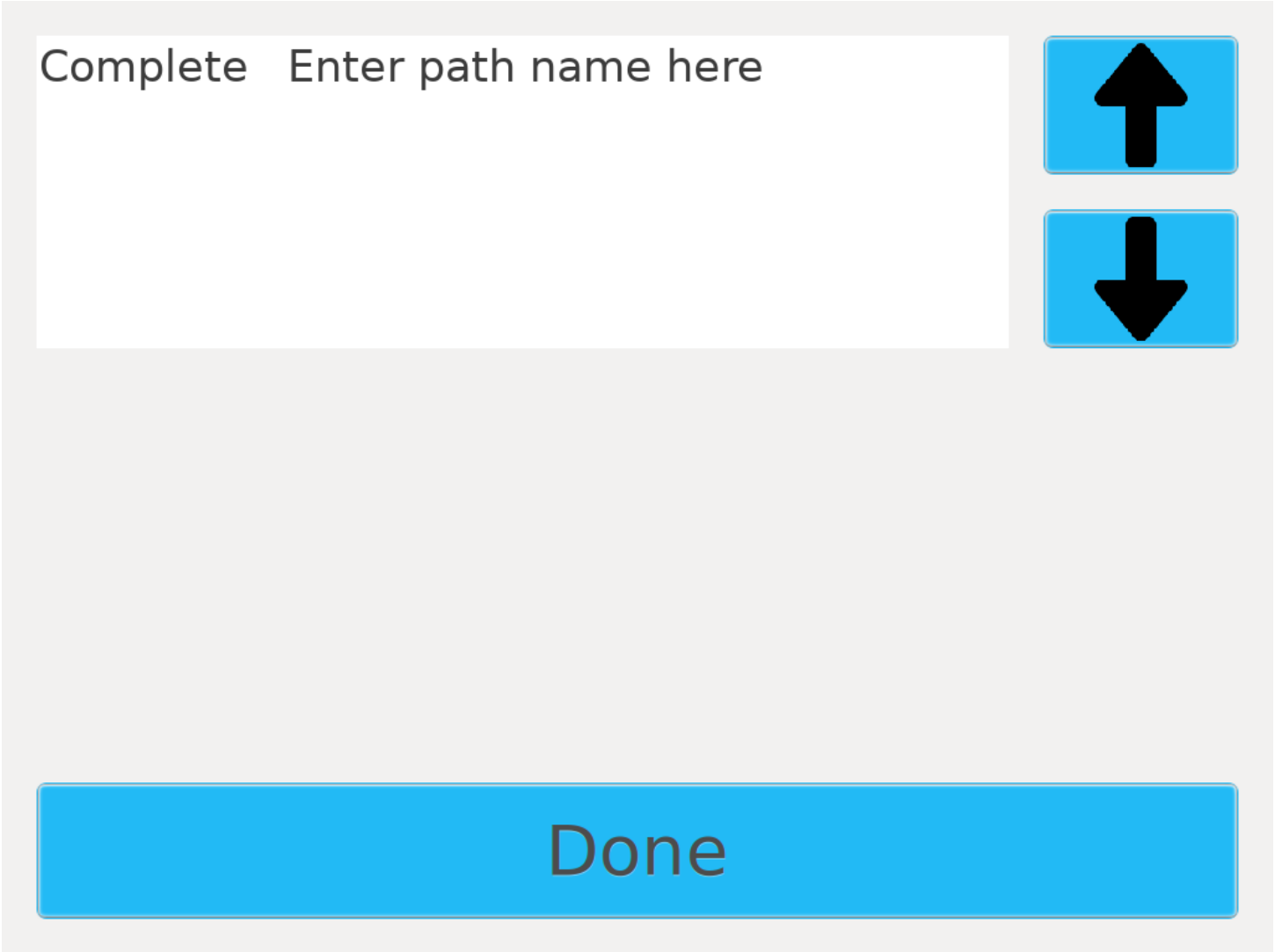
Process Recordings

- Click **Process** to convert your recordings into virtual layout paths.
- This can be done after each recording or at the end of the day.



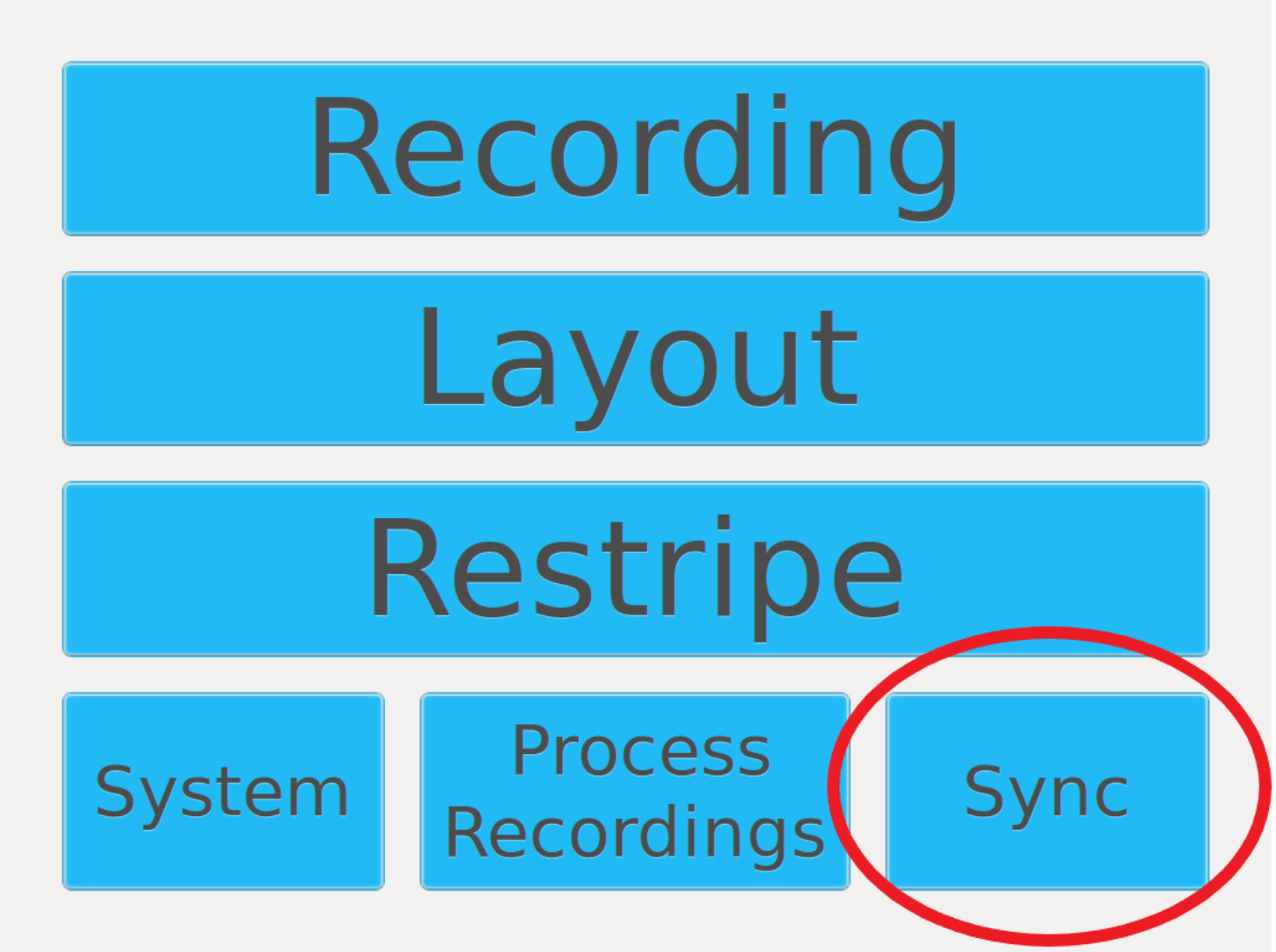
Process Recordings

- When all Recordings have successfully processed, they will show up in this window.



Syncing to the Web Portal

- It is **EXTREMLEY** important to sync to the web portal at least once per shift of recording.
- Syncing ensures that all systems within the company have the latest layout data.



Section Two

Layout User Interface

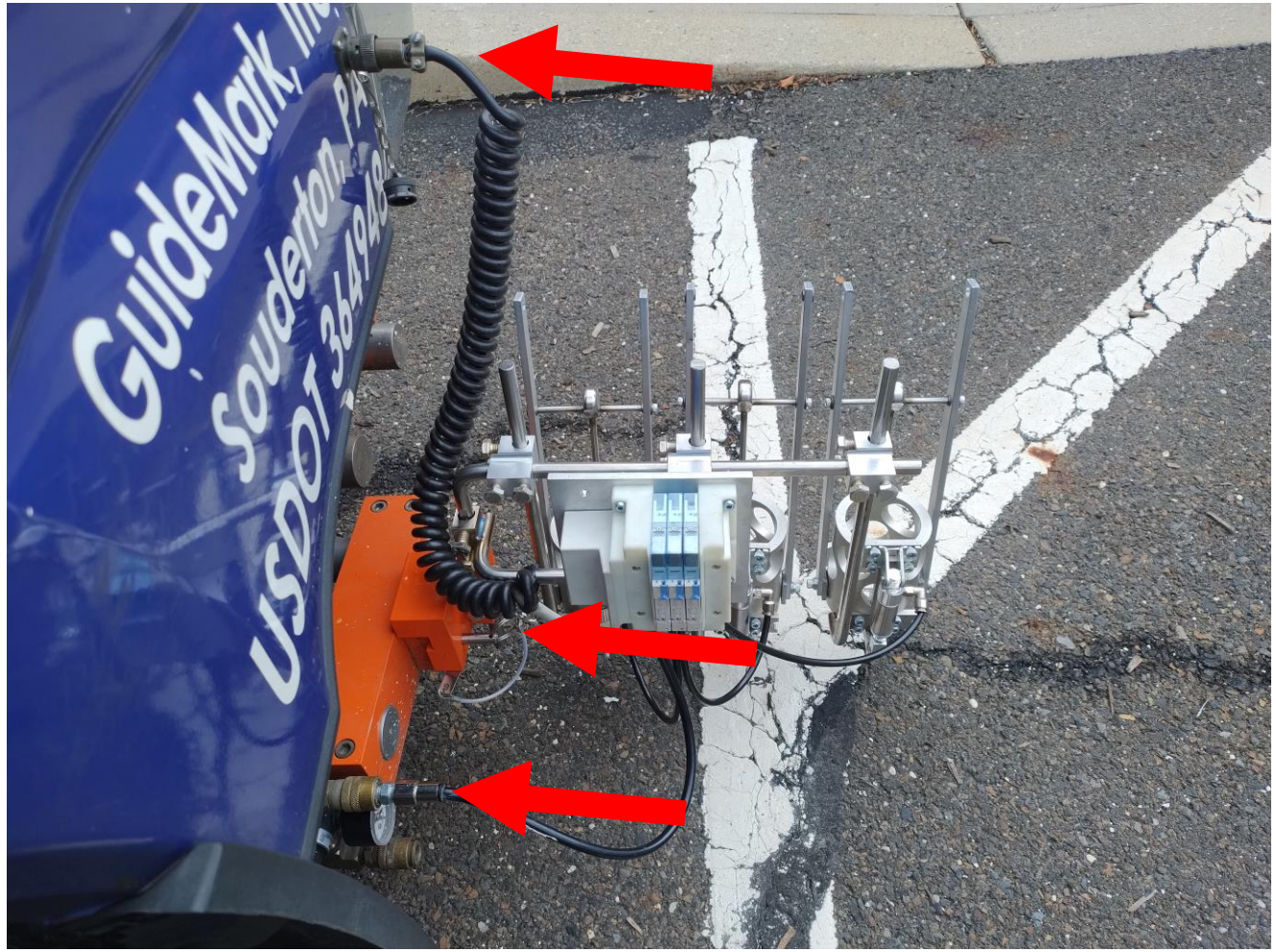
- A - With PAS set up
- B - With Single Can Setup

Section Two A

Layout User Interface
With PAS set up

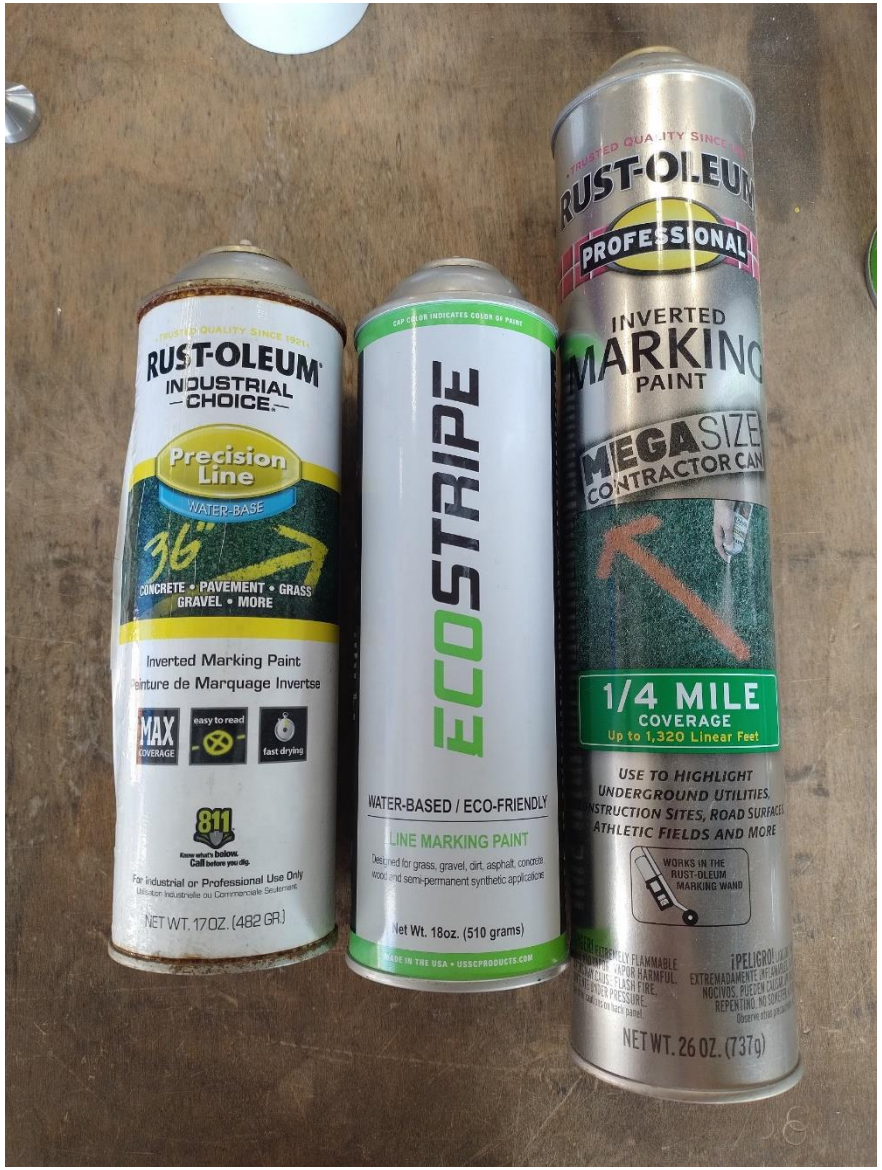
Attach PAS Assembly

- Attach the carriage assembly to the truck at the three points shown on the image to the right.



Select the Rattlecans

- The PAS supports two sizes of rattlecan. The standard size is 20 cm (7 3/4") in height from the top of the aluminum to the bottom. The tall size is 30 cm (11 3/4") in height.

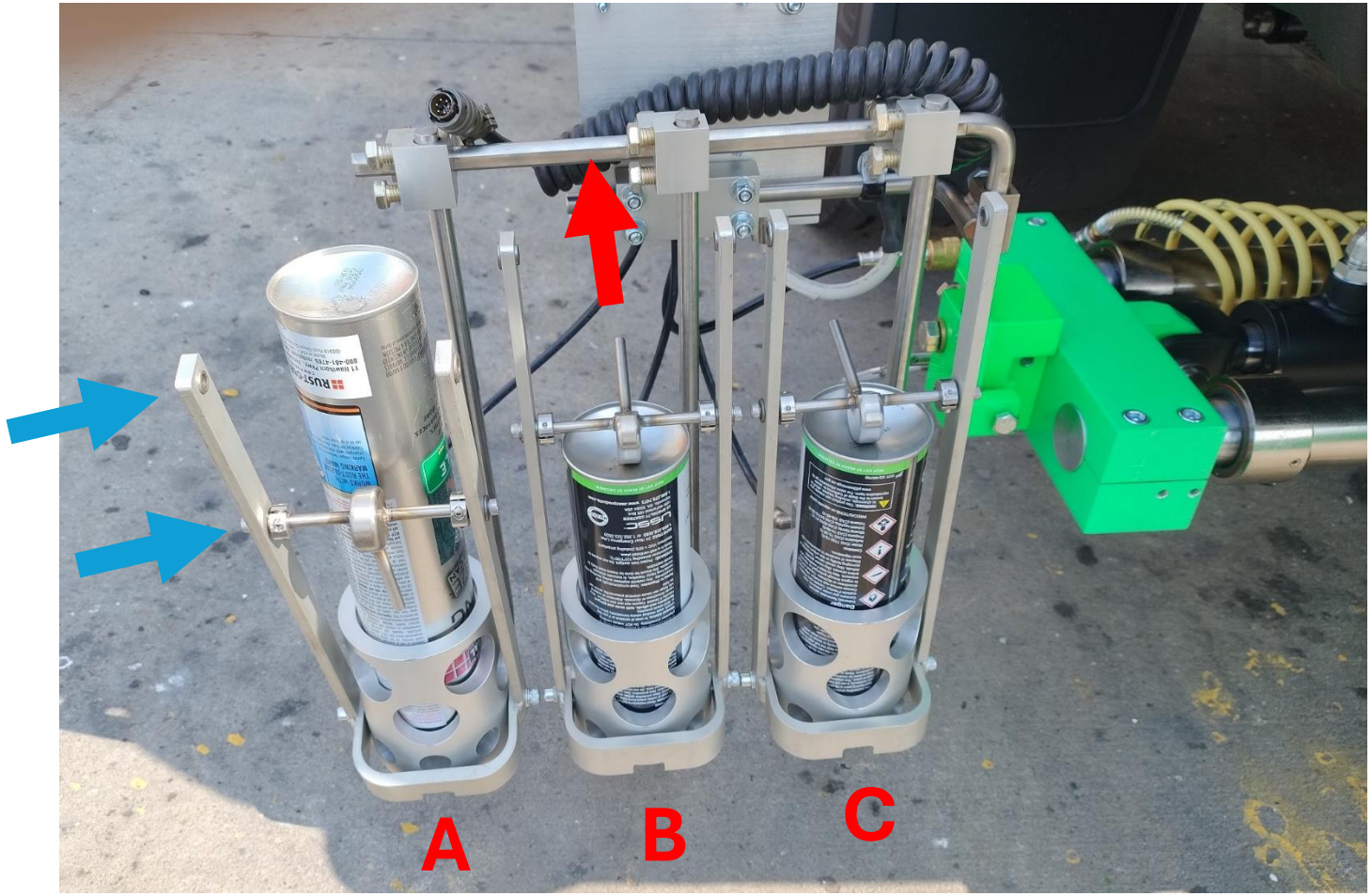


Prepare the Rattlecans

1. Grab a rattle can with a plastic tip as seen in **A**.
2. Remove the original plastic tip as seen in **B**.
3. Install the provided metal tip as seen in **C**. The provided tip requires a pressure fit, so it's not uncommon for a little paint to spray out when seating it.

Install the Rattlecans

- Place three rattlecans in their holders and secure them by pushing the locking rod forward in the direction of the red arrow, as seen in **B** and **C**.
- When using a tall rattlecan as in **A**, remove the locking rod and move it to the upper position as shown with the blue arrows.

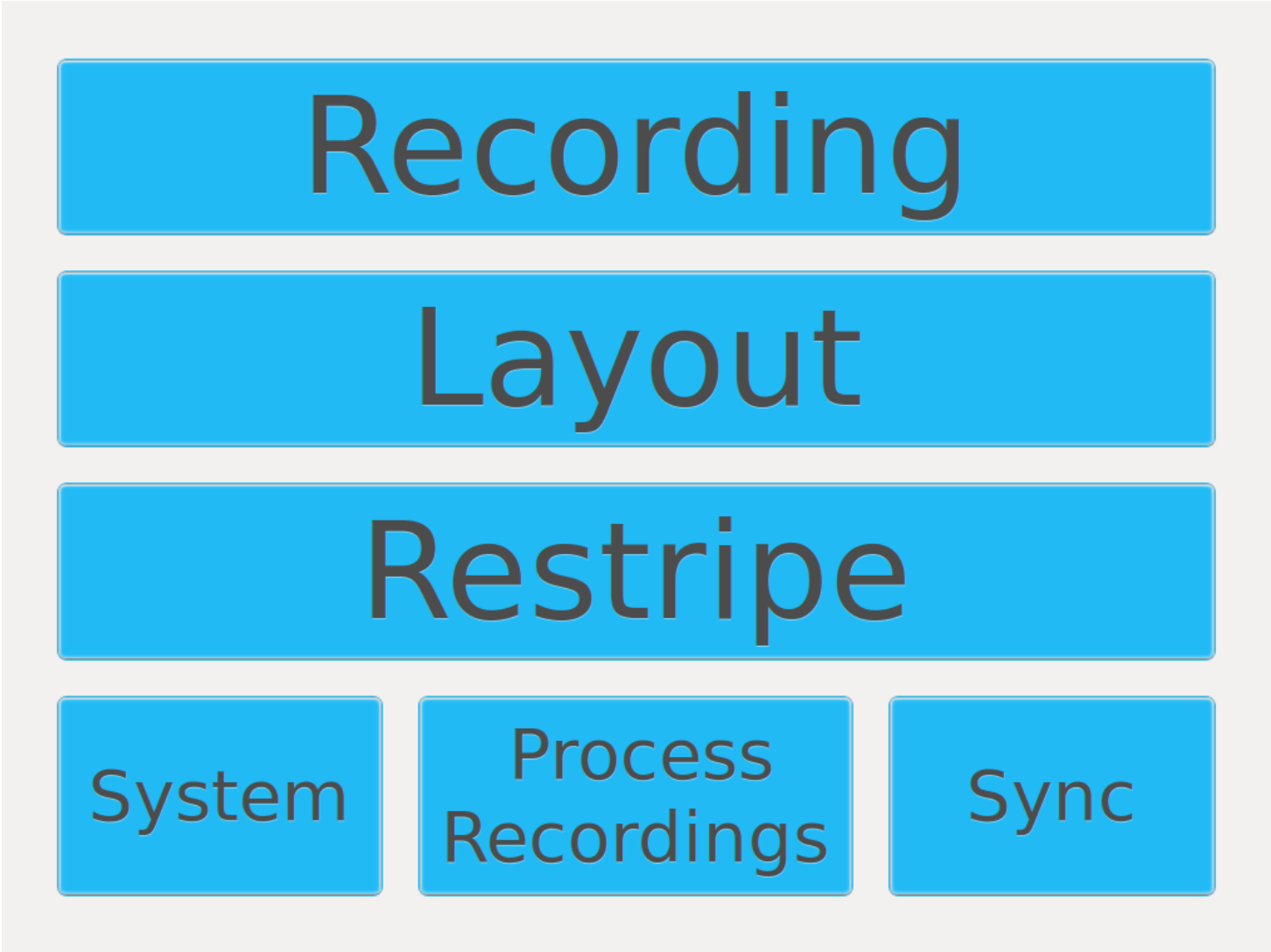


Enable Air to the PAS Assembly

- In the cab of the truck, switch on the air compressor. Depending on the build, this switch is located either overhead or below the center console.
- If a Skip-Line or Epic skip timing unit is included in the vehicle build, power it on and perform the following to enable the flow of air to the PAS assembly:
    1. For driver's side layout, set "Gun 1" to solid.
    2. For passenger side layout, set "Gun 4" (Skip-Line) or "Gun 2" (Epic) to solid.
    3. Flip the Start/Stop switch to the Start position.

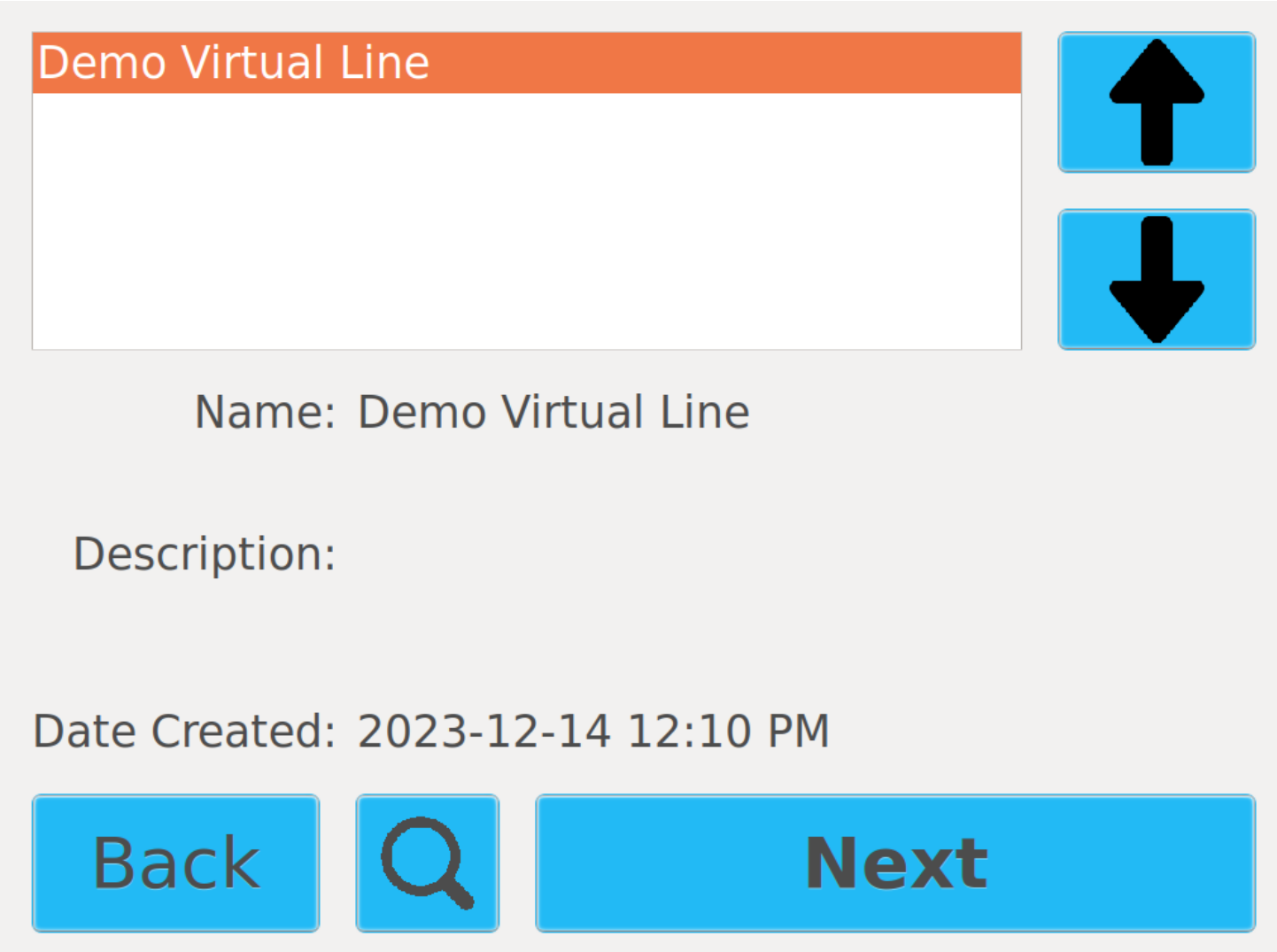
Main Menu

- Select the **Layout** button to begin.
- Note: The **Restripe** button will only be present in LifeMark®-400 systems.



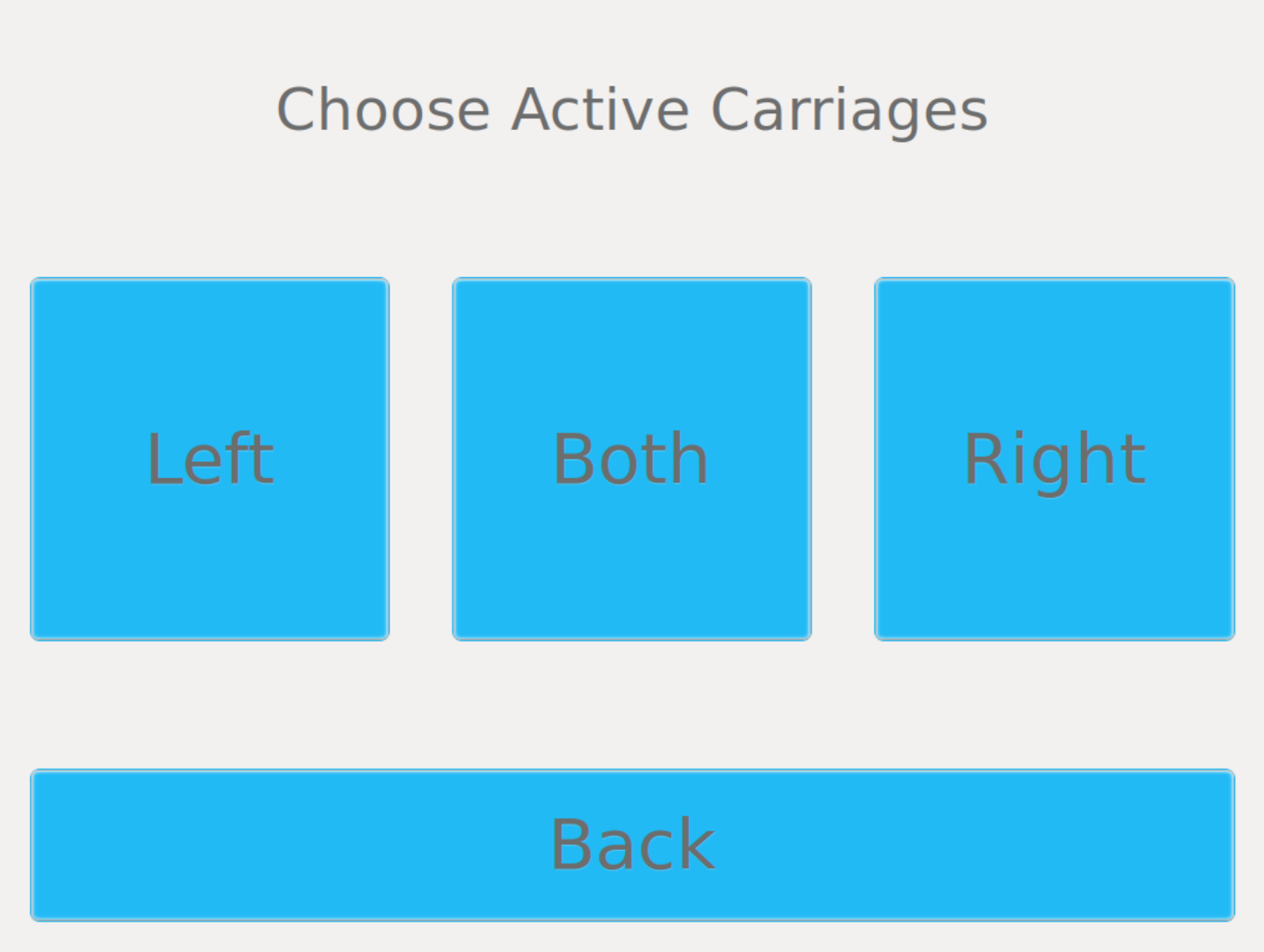
Path List Selection

- This screen lists all of the available Layout paths.
- Select the path you want to lay out and hit **Next**.



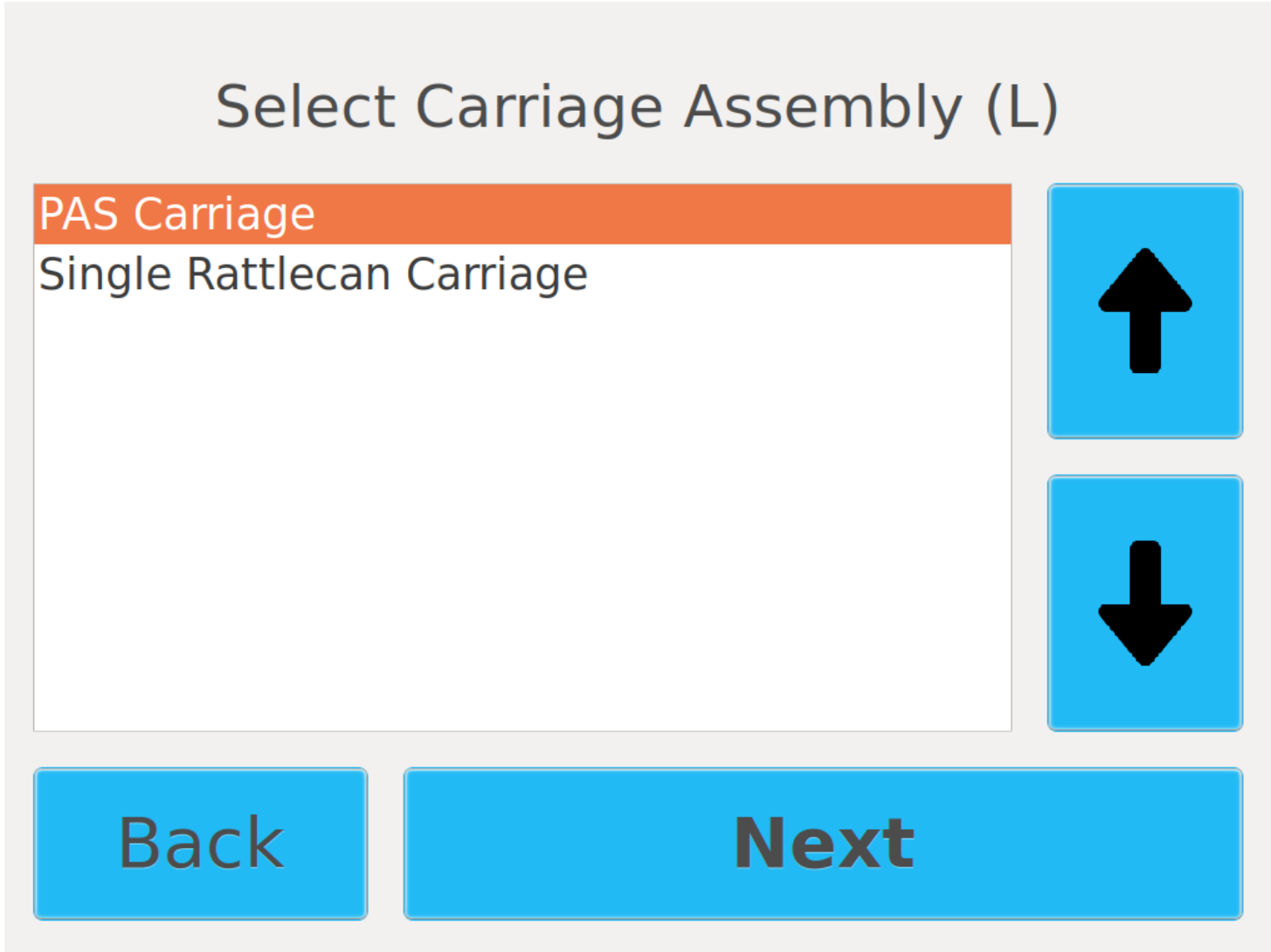
Carriage Selection

- Select which carriages you would like to use for Layout.
- The following slides demonstrate the screens for a **Left** active carriage.



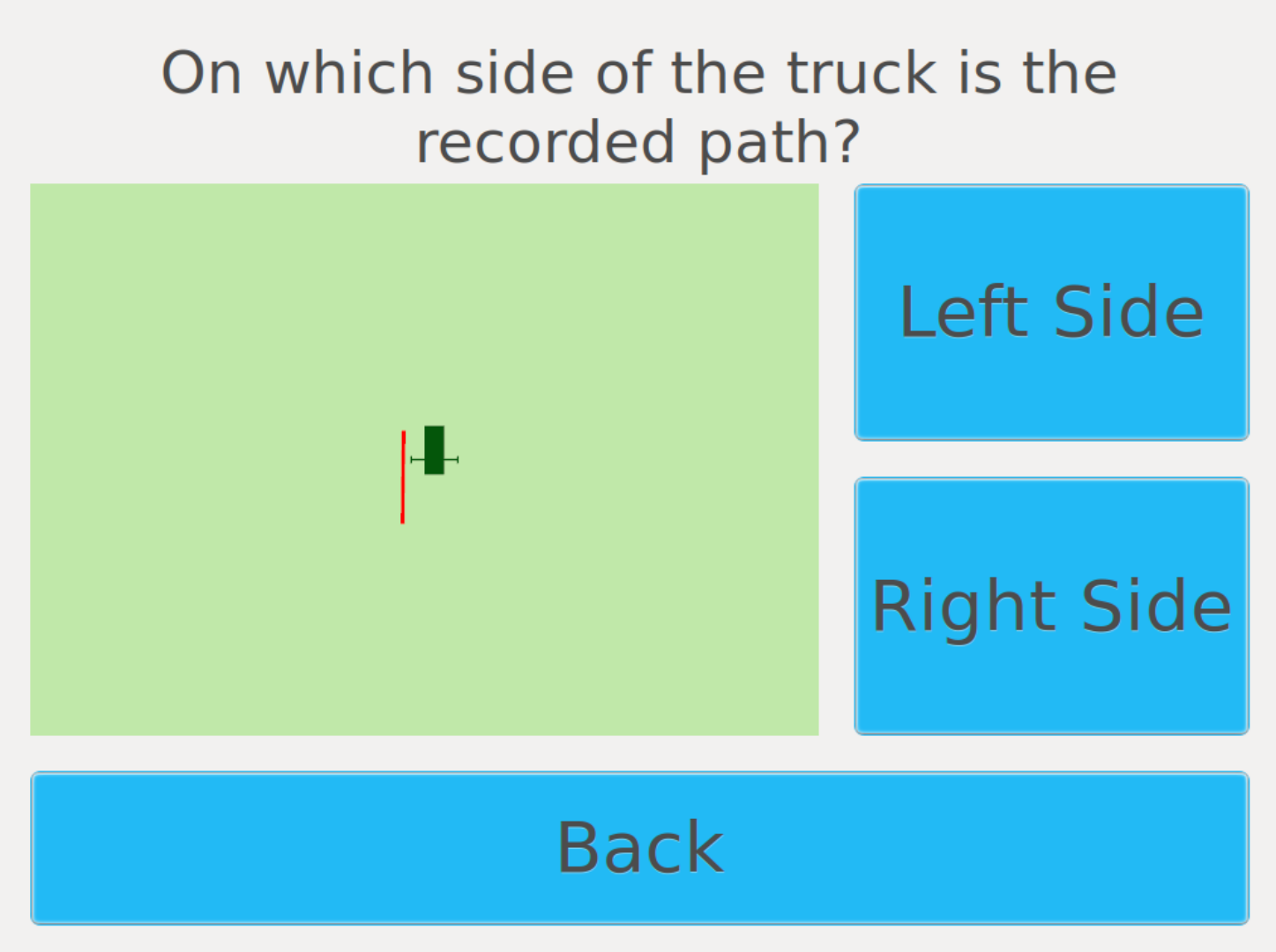
Carriage Assembly Selection

- PAS equipped systems have two carriage assembly options.
- This screen asks the user to specify which attachment is being used for layout.
- The "PAS Carriage" has been selected for this tutorial.



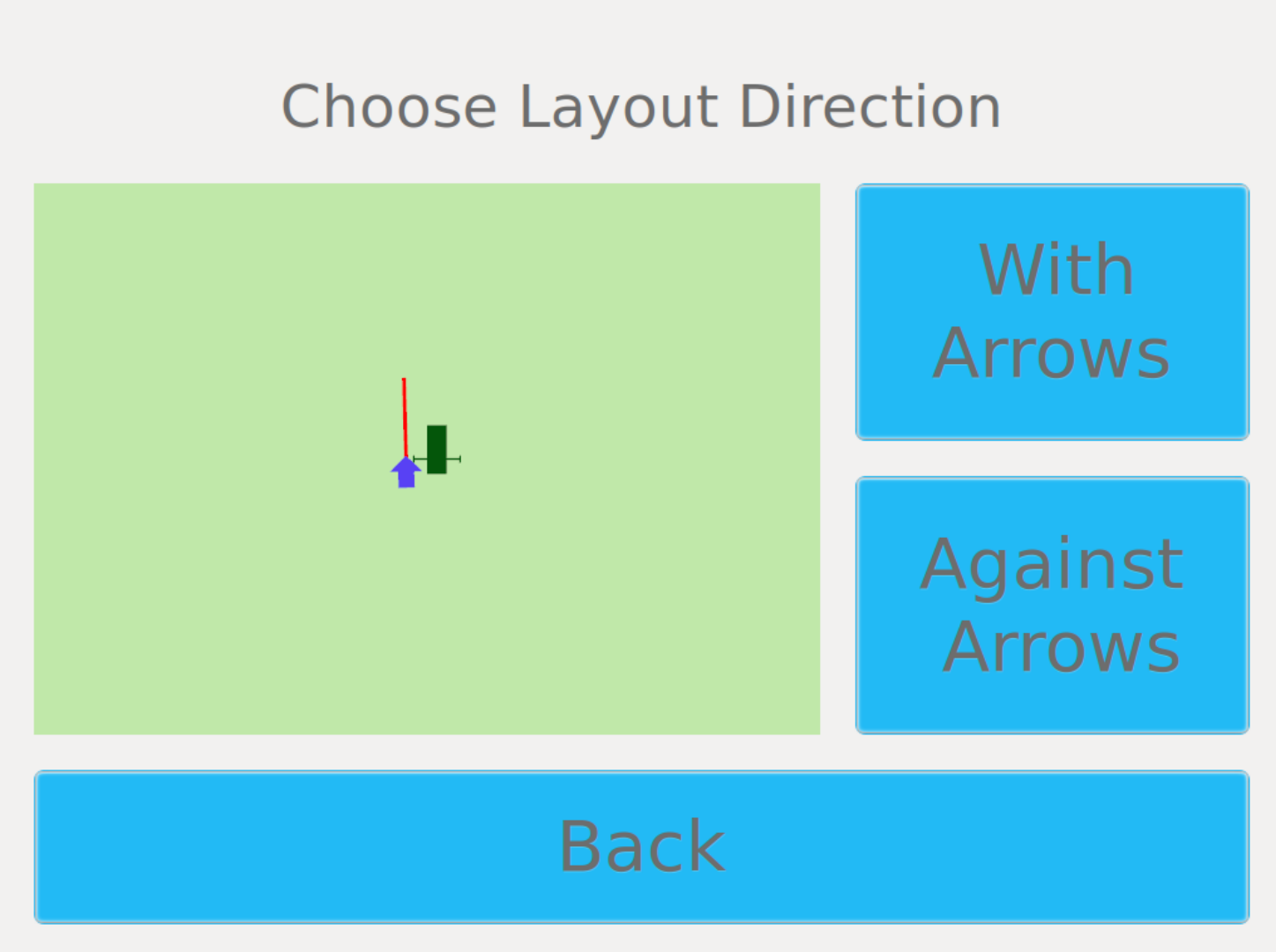
Side Selection

- Select whether the red virtual line appears to the left or right of the truck.



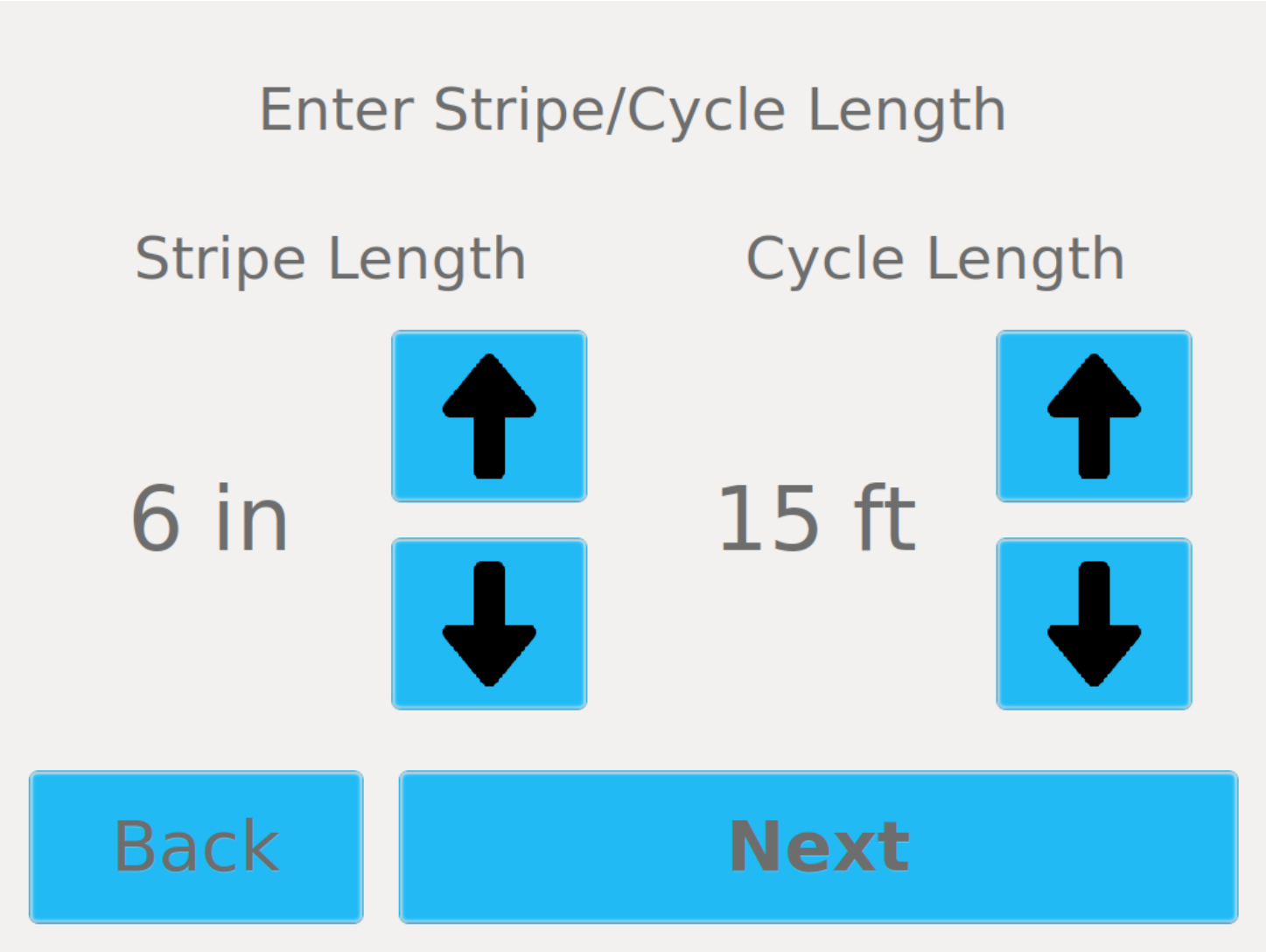
Direction Selection

- Select whether Layout is going to occur in the same or opposite direction of the arrows displayed on the screen.



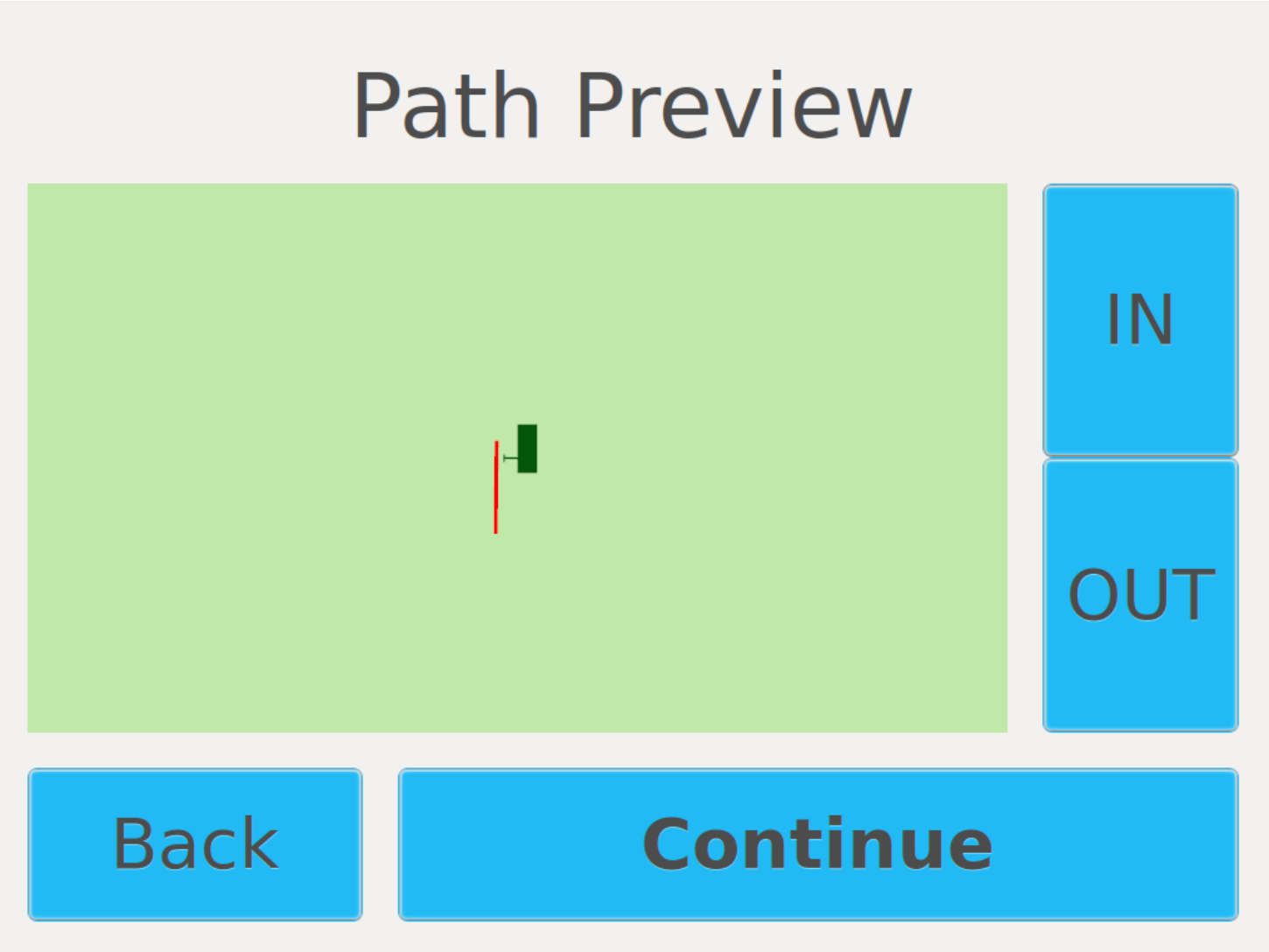
Stripe Cycle Selection

- The PAS software controls the stripe/cycle of the middle rattlecan.
- This screen allows for the user to set their desired stripe/cycle.



Path Preview

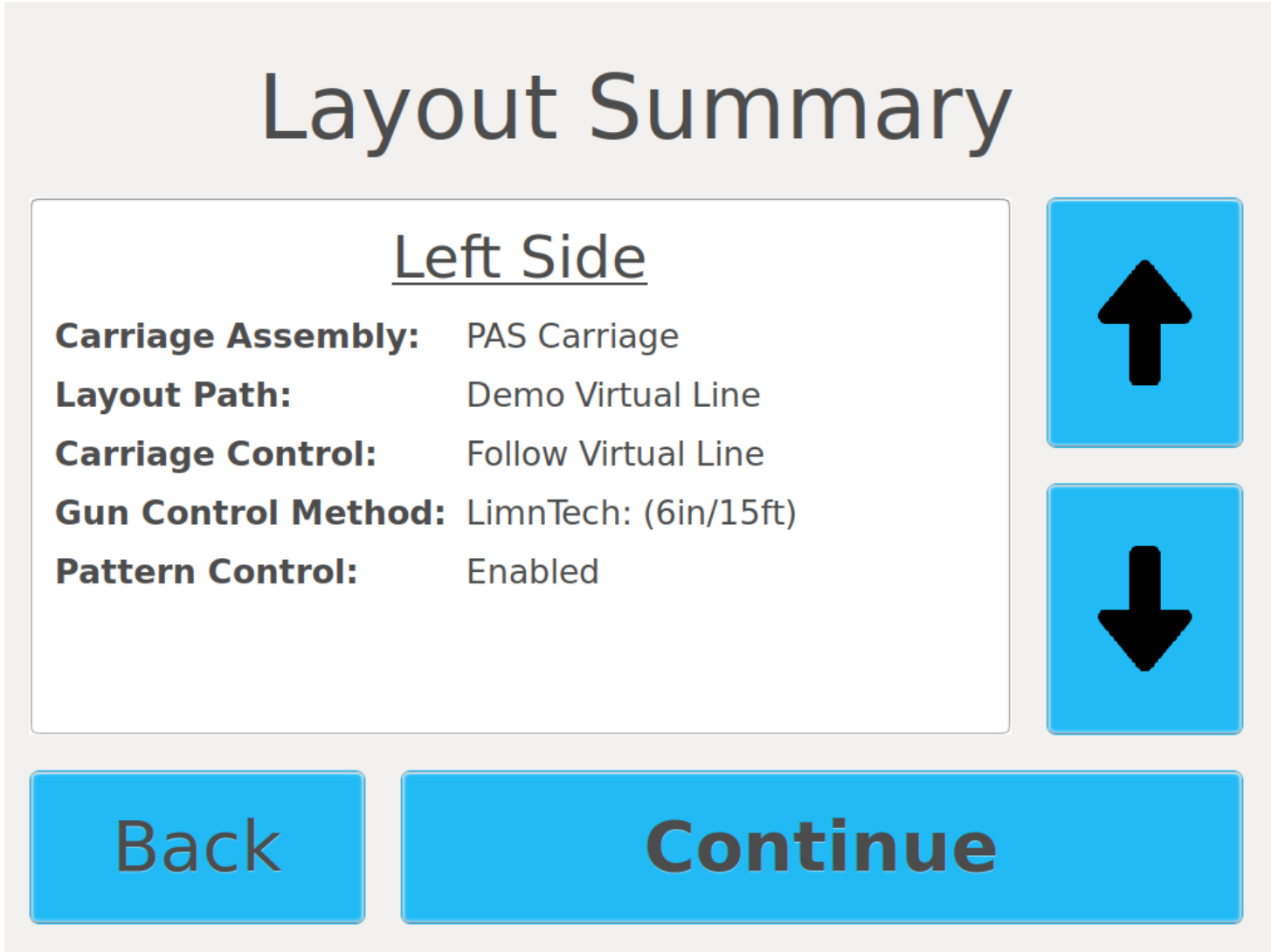
- This screen allows the user to locate the virtual line they wish to layout.
- Pressing continue will allow the user to advance to the next screen.



Layout Summary

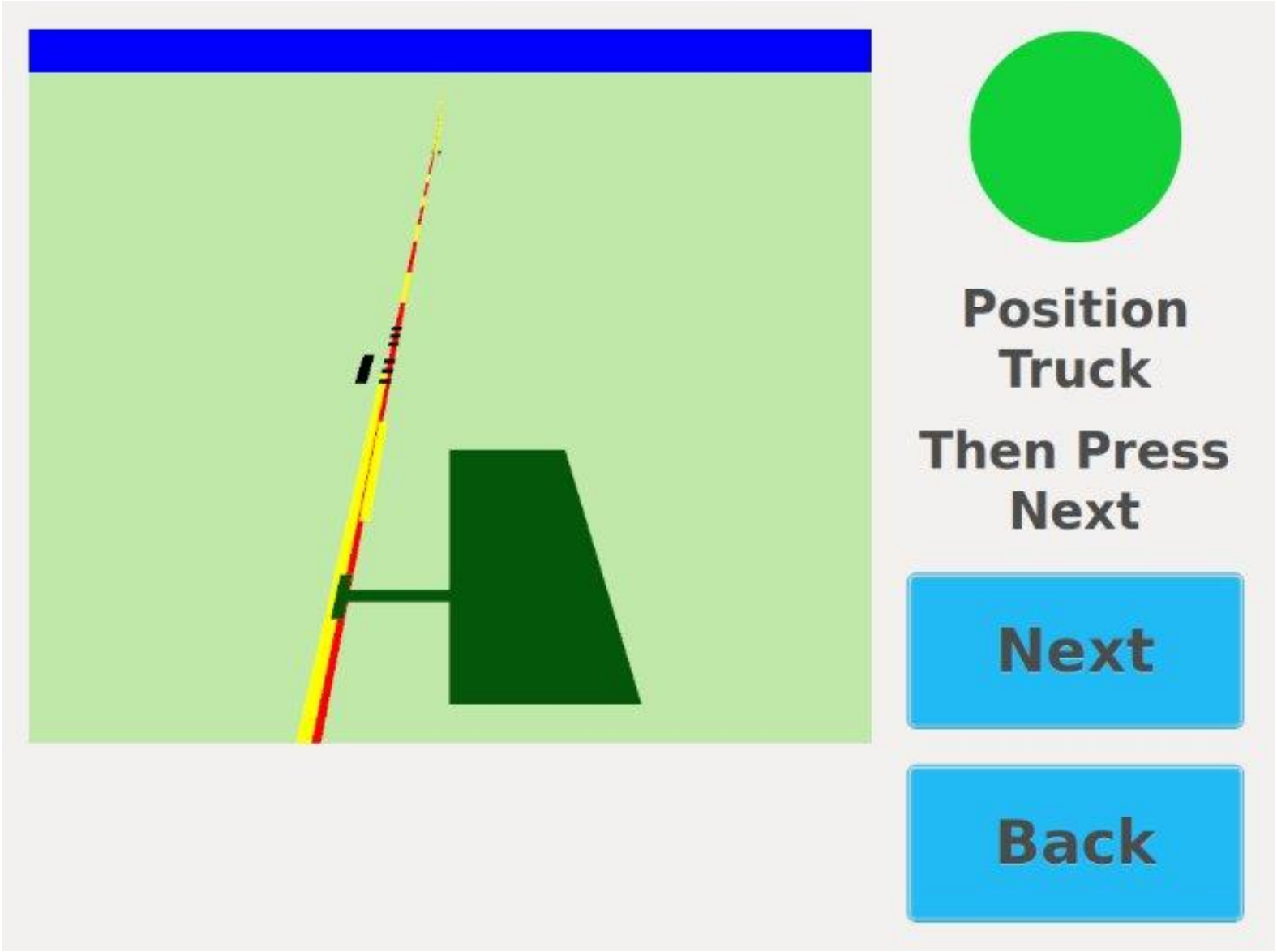
- This screen allows the user to review how they set up their layout job to make sure all of their user input is correct.

- **Carriage Assembly:** This shows the user which carriage attachment is selected for layout. This could be single-rattlecan or PAS.
- **Layout Path:** This is the name of the selected virtual line.
- **Carriage Control:** This shows how the carriage will follow the line. It will either follow the line directly or at a constant offset.
- **Gun Control Method:** This tells the user if the layout dots will be controlled by the LimnTech system or a separate paint control box.
- **Pattern Control:** This shows whether PAS is enabled or disabled for this layout job.



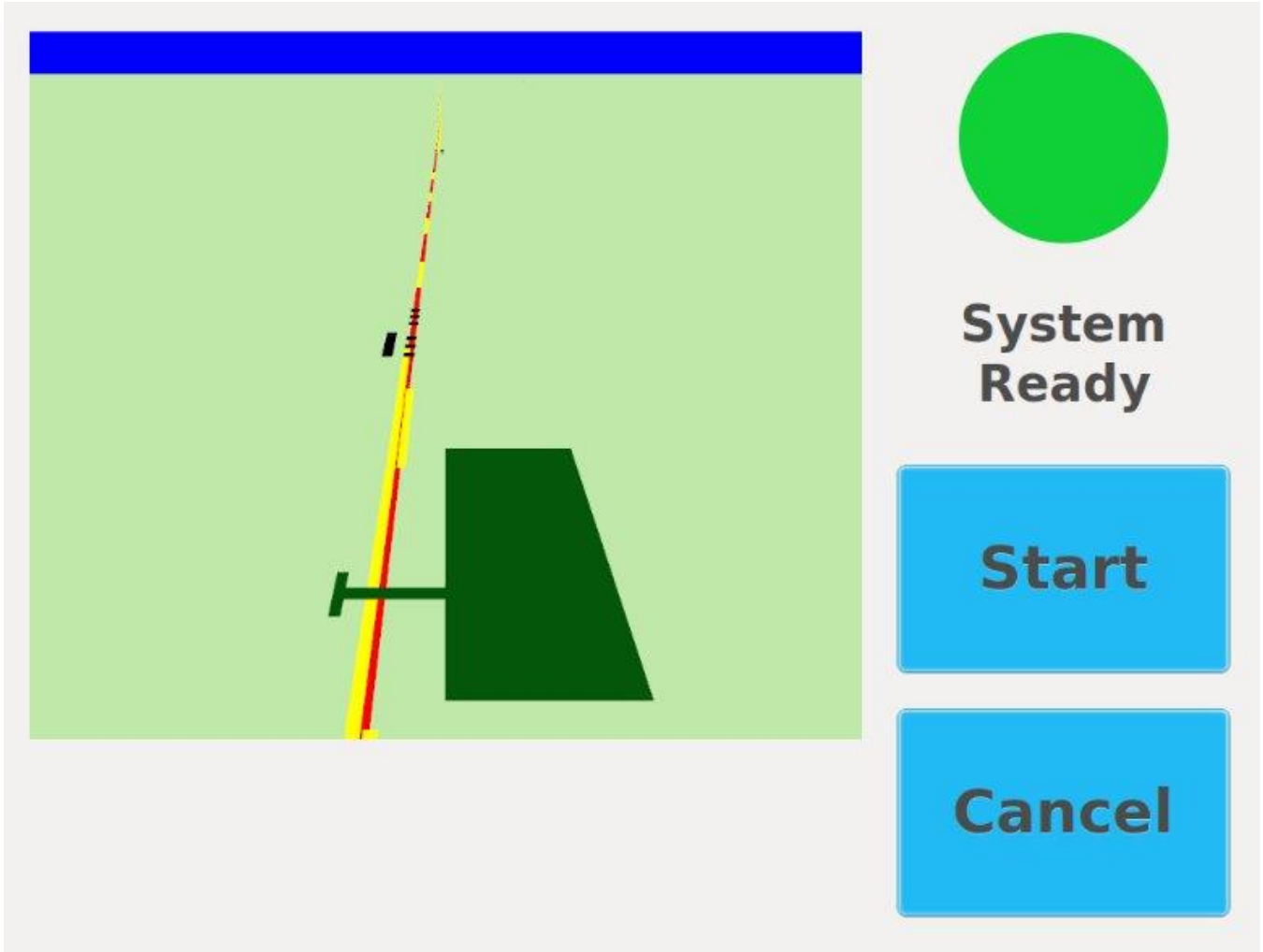
Position Truck

- This screen allows the user to locate the virtual line they wish to layout.
- If your truck build requires PTO or a pony motor to be started for layout, make sure they are started now.
- Make sure air is being fed to the carriage assembly.
- Since PAS is enabled, the pattern will be overlaid on top of the virtual line. The pattern transitions are also drawn on the screen which are represented in black.



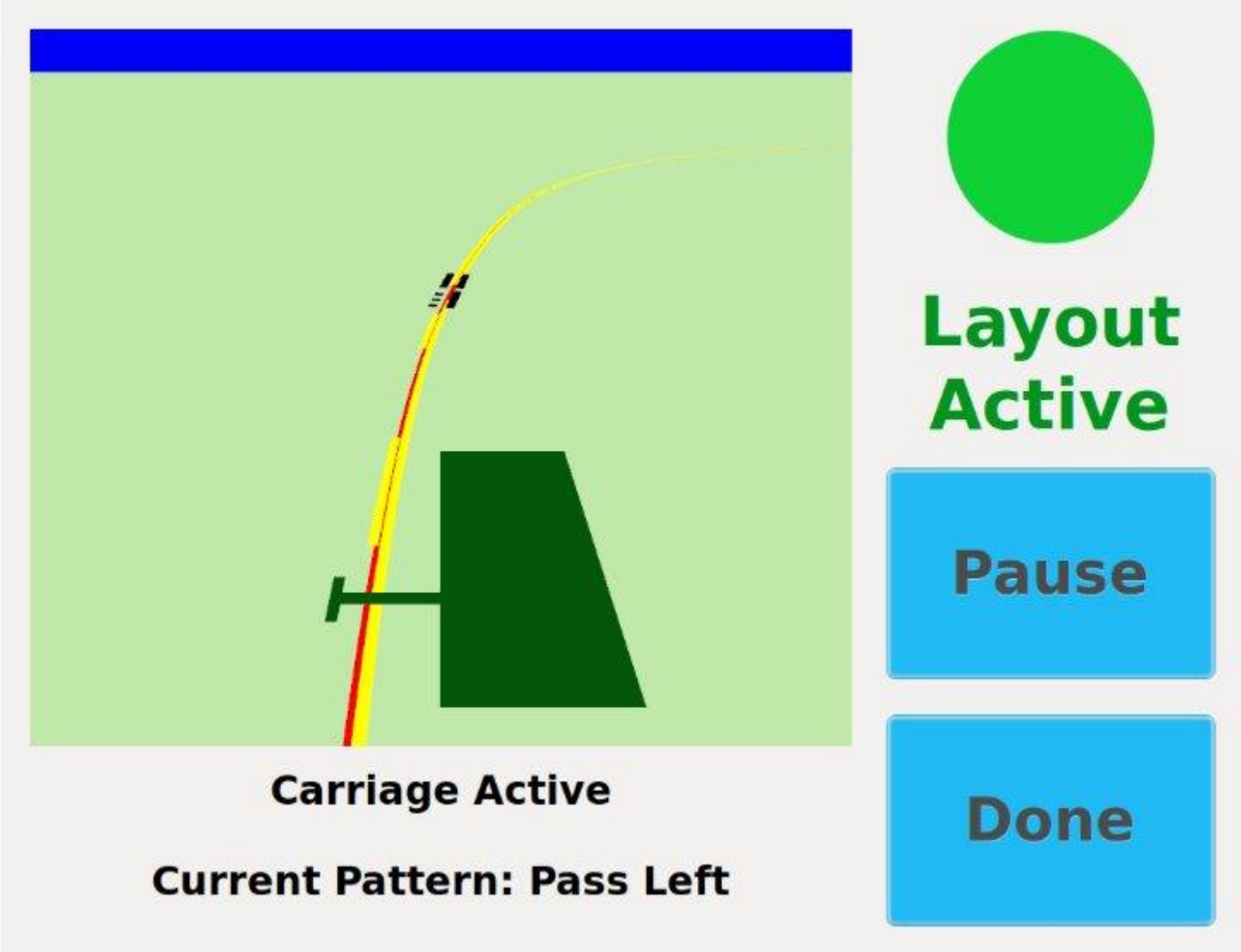
Layout Idle

- Press start to have the system automatically move the carriage over the virtual line.



Layout Active

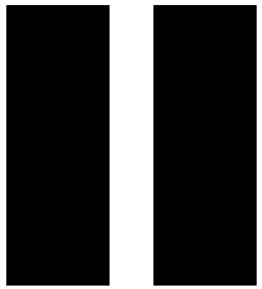
- As the carriage is following the line, the current pattern will be displayed at the bottom of the screen.
- The inside and outside paint guns will fire to signify a change in pattern.
- The middle gun will align with the virtual line and place the layout dots.
- Press **Pause** to stop painting and retract the carriage.
- Press **Done** to exit the Layout job.



Pattern Transitions

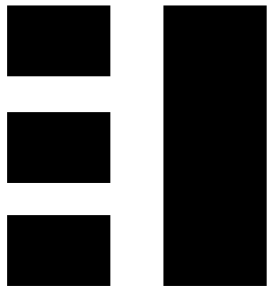
- During layout, pattern transitions will be marked in the following format:
    1. Previous Pattern
    2. Gap (No markings are painted)
    3. Next Pattern
- The LimnTech system will recognize and have encodings for 8 distinct patterns. These encodings can be found on the next slide.

Pattern Transition Types

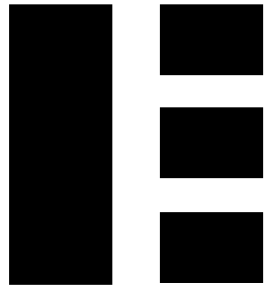


Double Line

Single Line



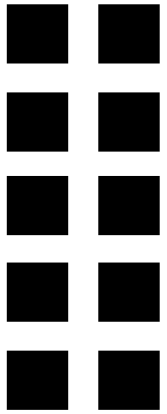
Pass Left



Pass Right

Pass Both Ways

Single Mini Skip



Double Mini Skip

No Line

PAS Tips

1. The rattlecans must fire rapidly in order to paint the pass lane and mini skip transitions. If the vehicle is driving too quickly while painting these transitions, some of the short skip marks may be missed. For best performance, limit the vehicle speed to 10-15 mph during PAS layout.
2. The PAS transition markings will be laid out within a foot or two of the original pattern transitions.

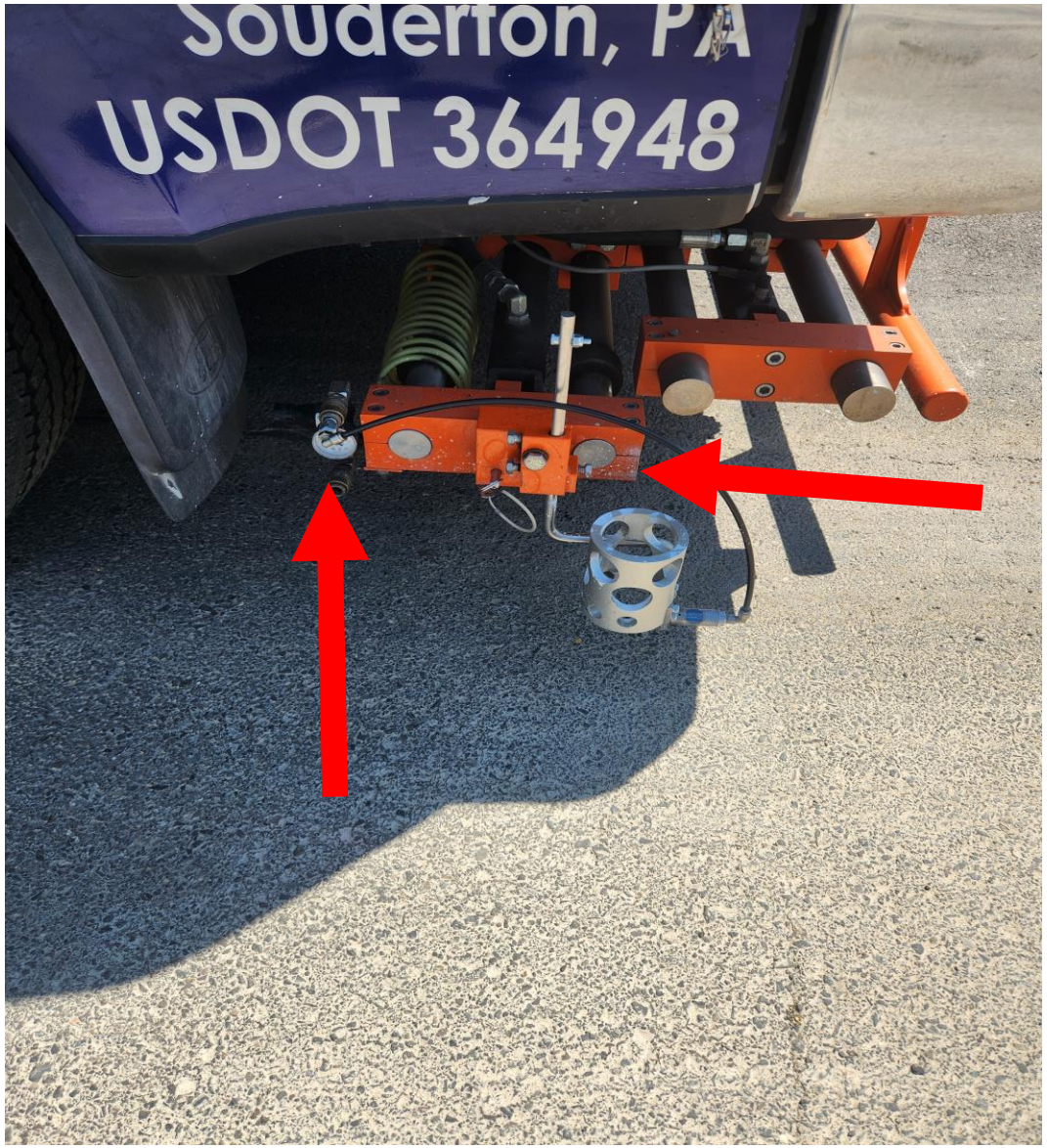
Section Two B

Layout User Interface

B - With Single Can Setup

Attach Single Rattlecan Assembly

- Attach the carriage assembly to the truck at the two points shown on the image to the right.



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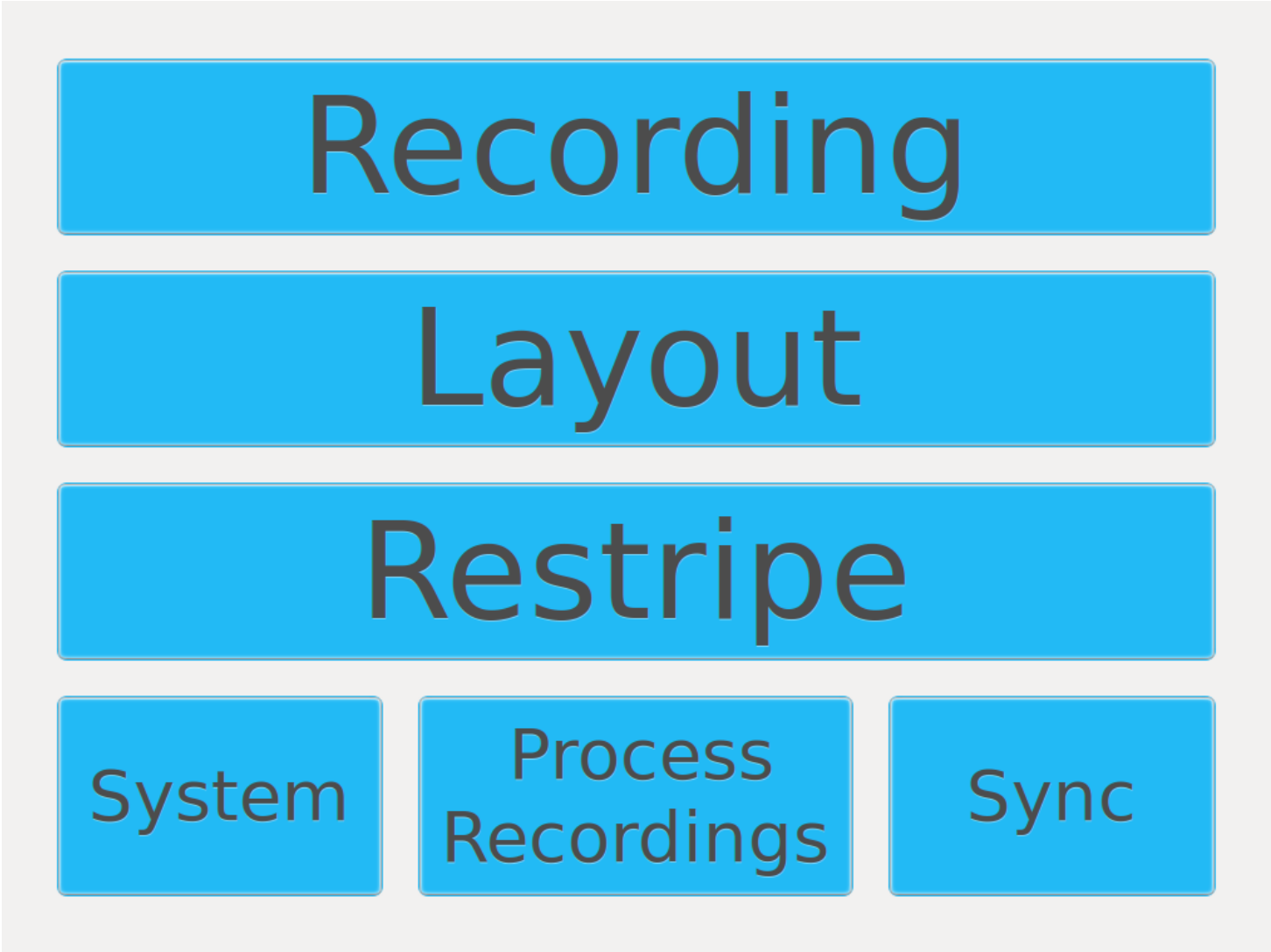

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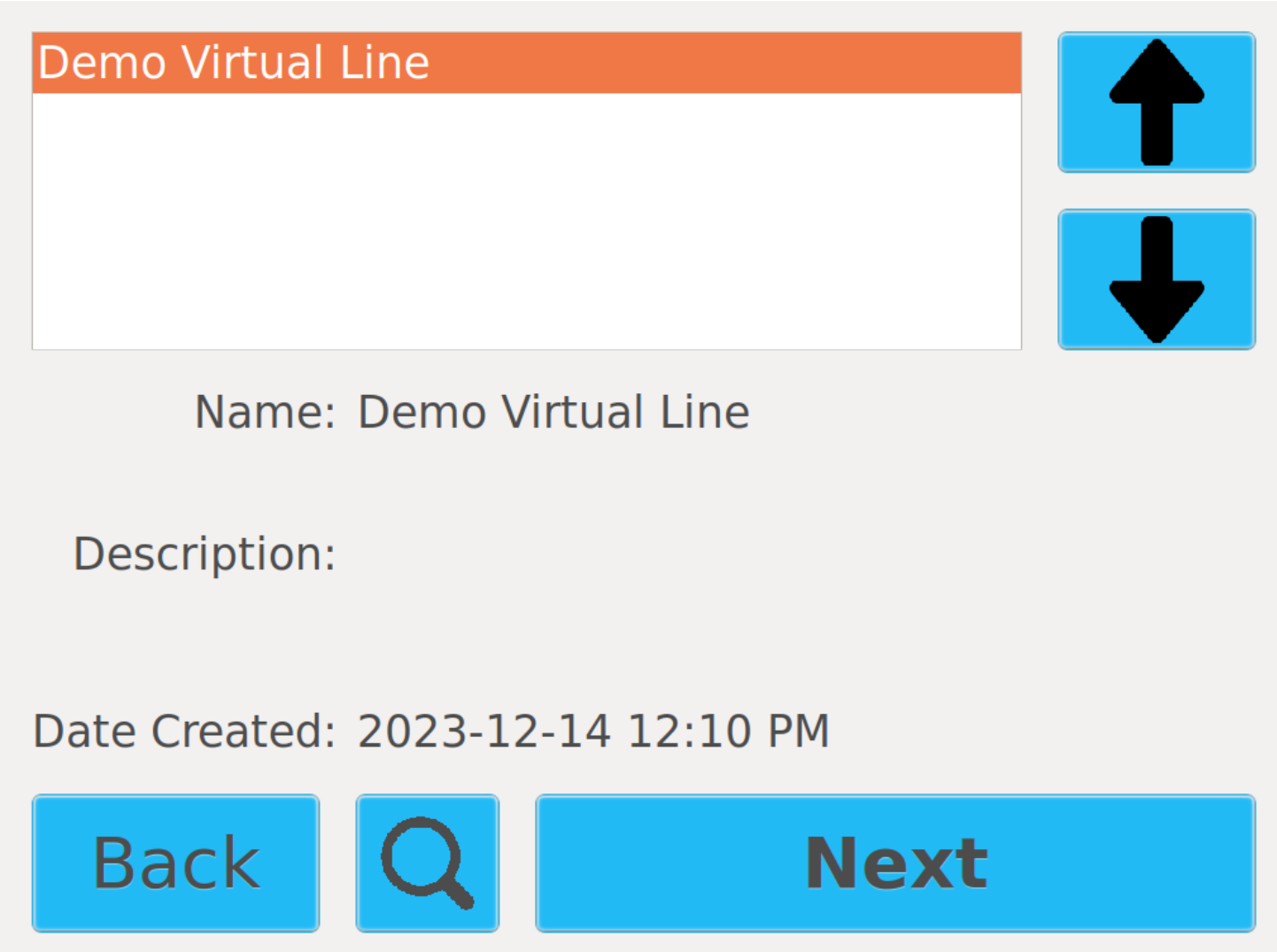
- Select the path you want to lay out and hit **Next**.



Carriage Selection

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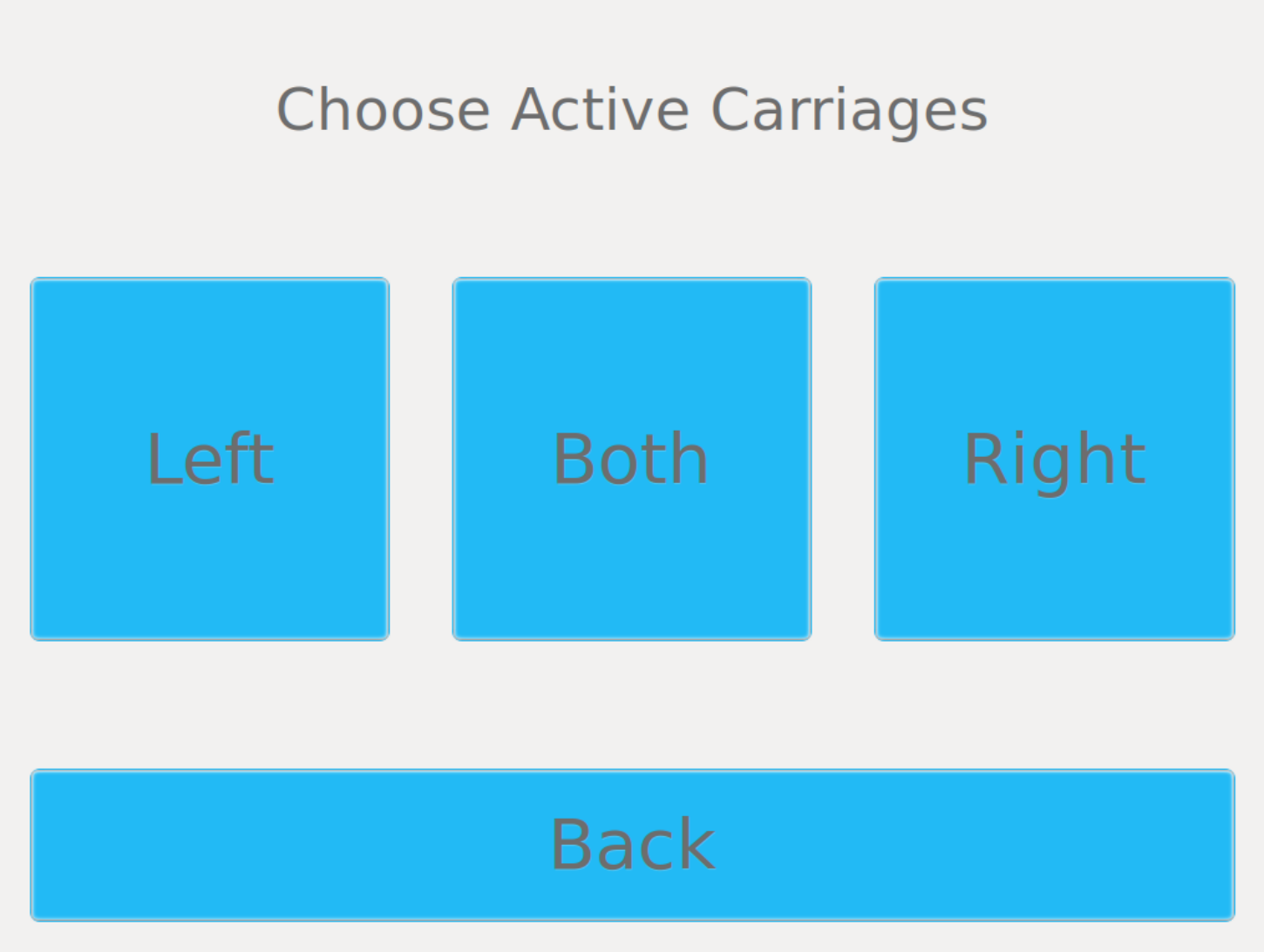
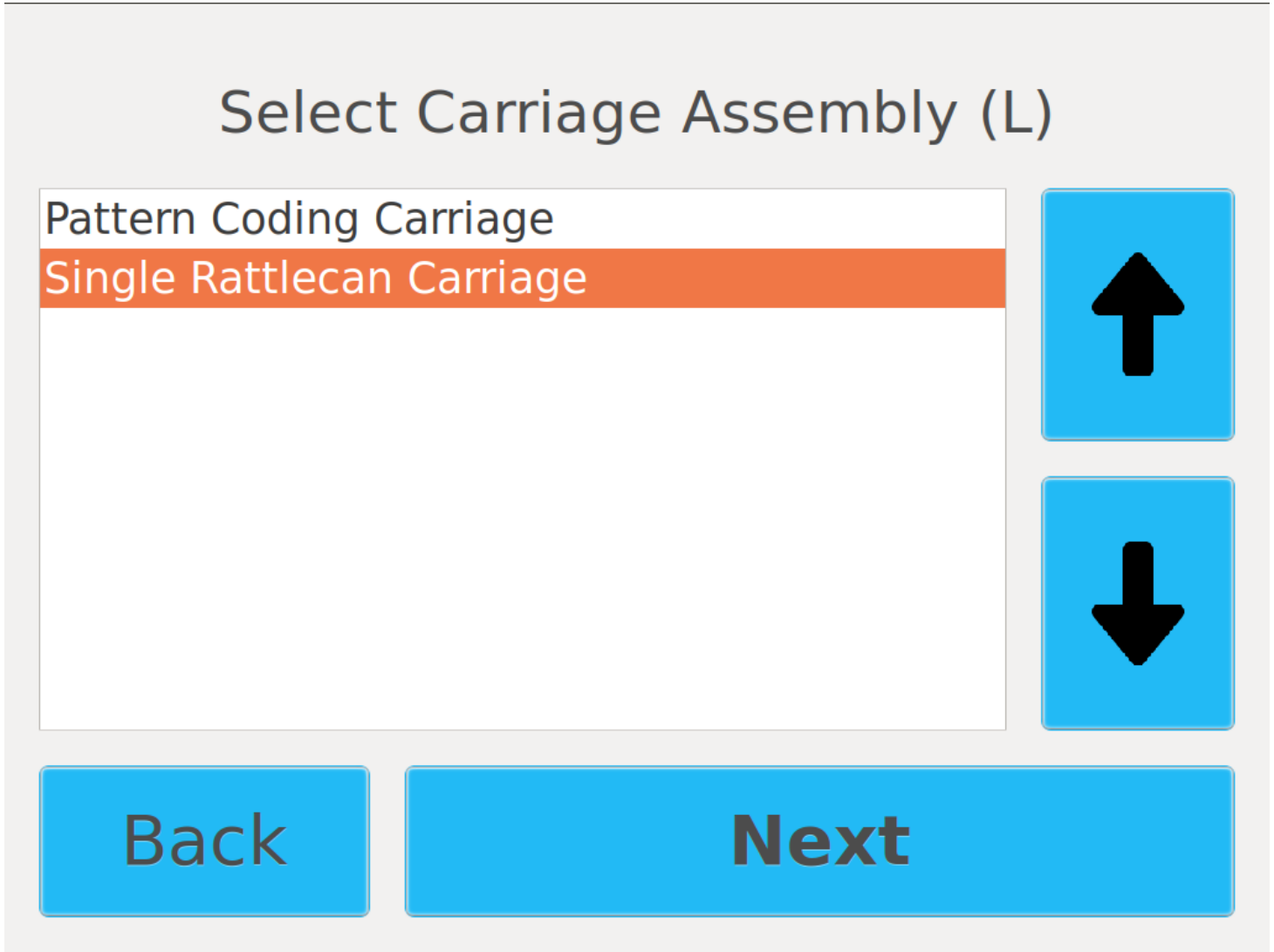


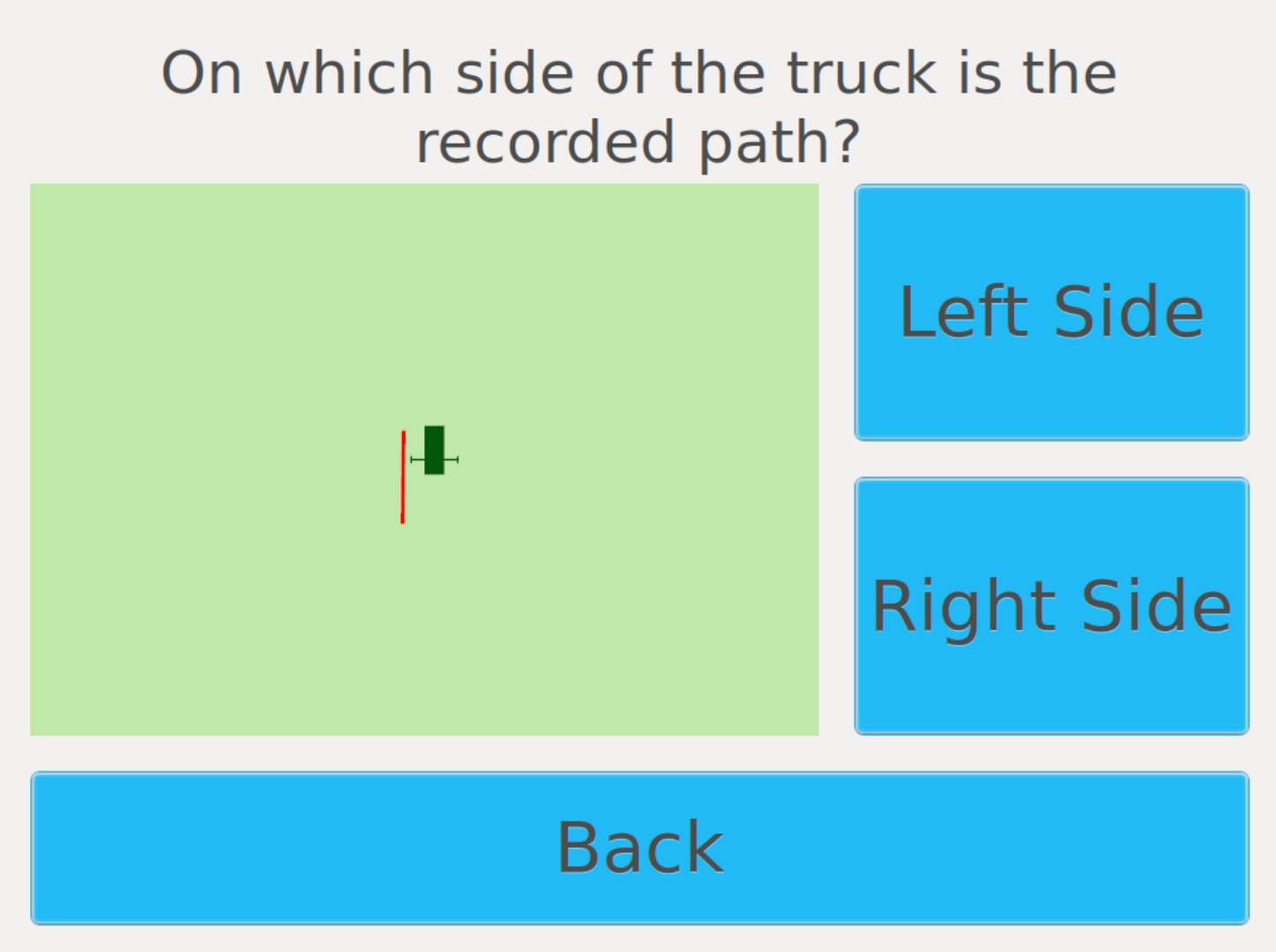
Carriage Assembly Selection

- PAS equipped systems have two carriage assembly options.
- This screen asks the user to specify which attachment is being used for layout.
- The "Single Rattlecan Carriage" has been selected for this section of the tutorial.



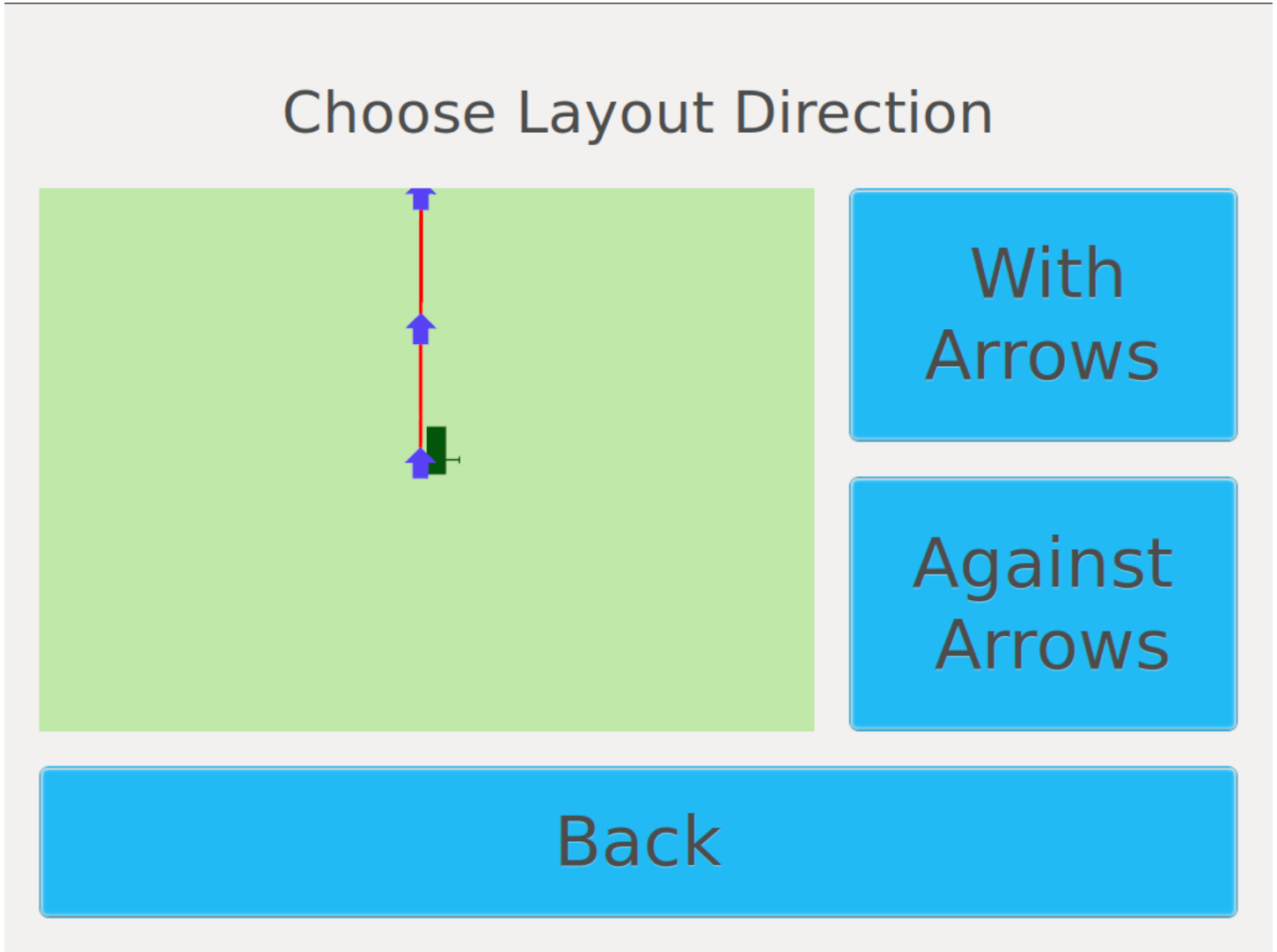
Side Selection

- Select whether the red virtual line appears to the left or right of the truck.



Direction Selection

- Select whether Layout is going to occur in the same or opposite direction of the arrows displayed on the screen.



Path Preview

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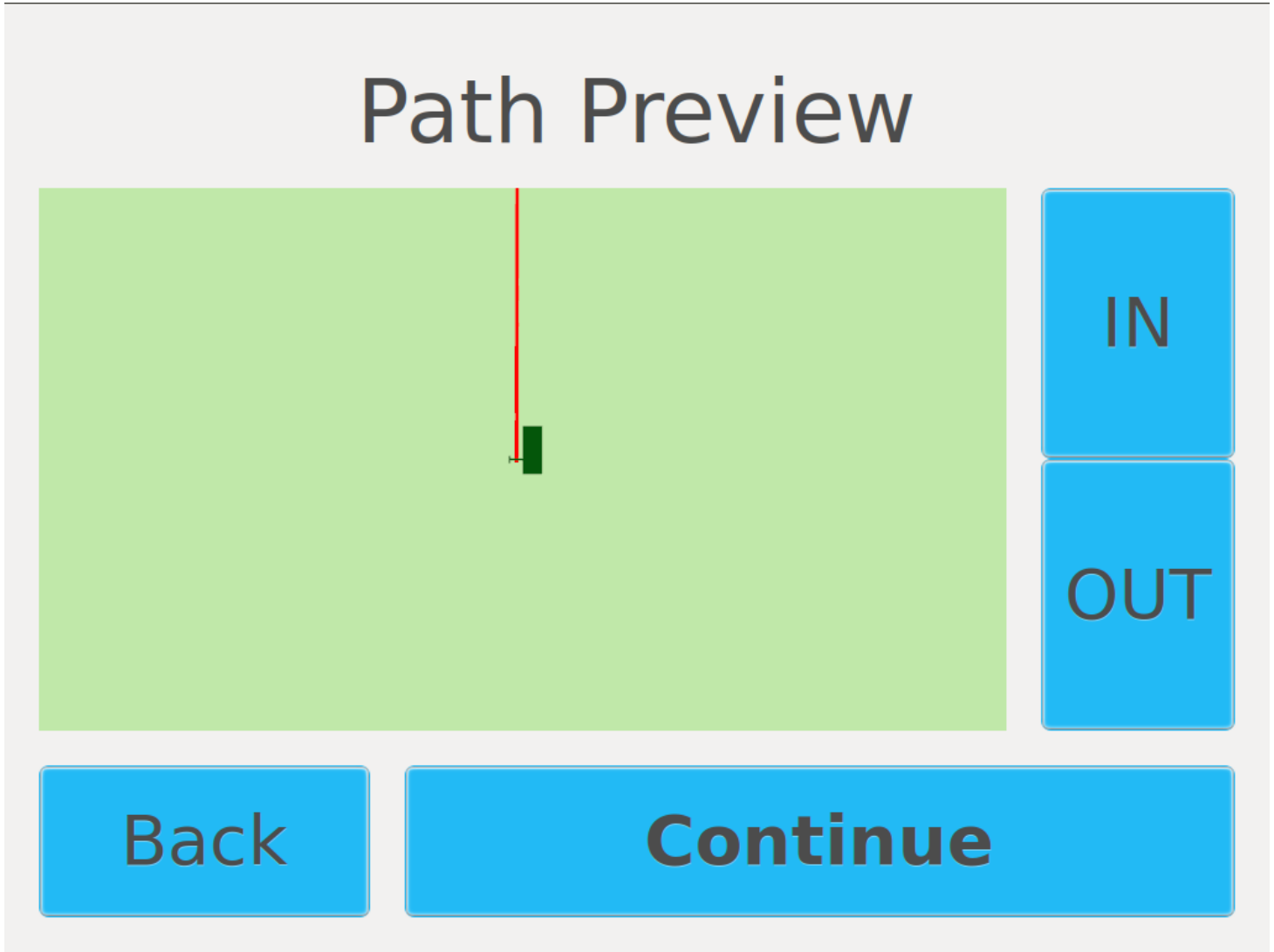

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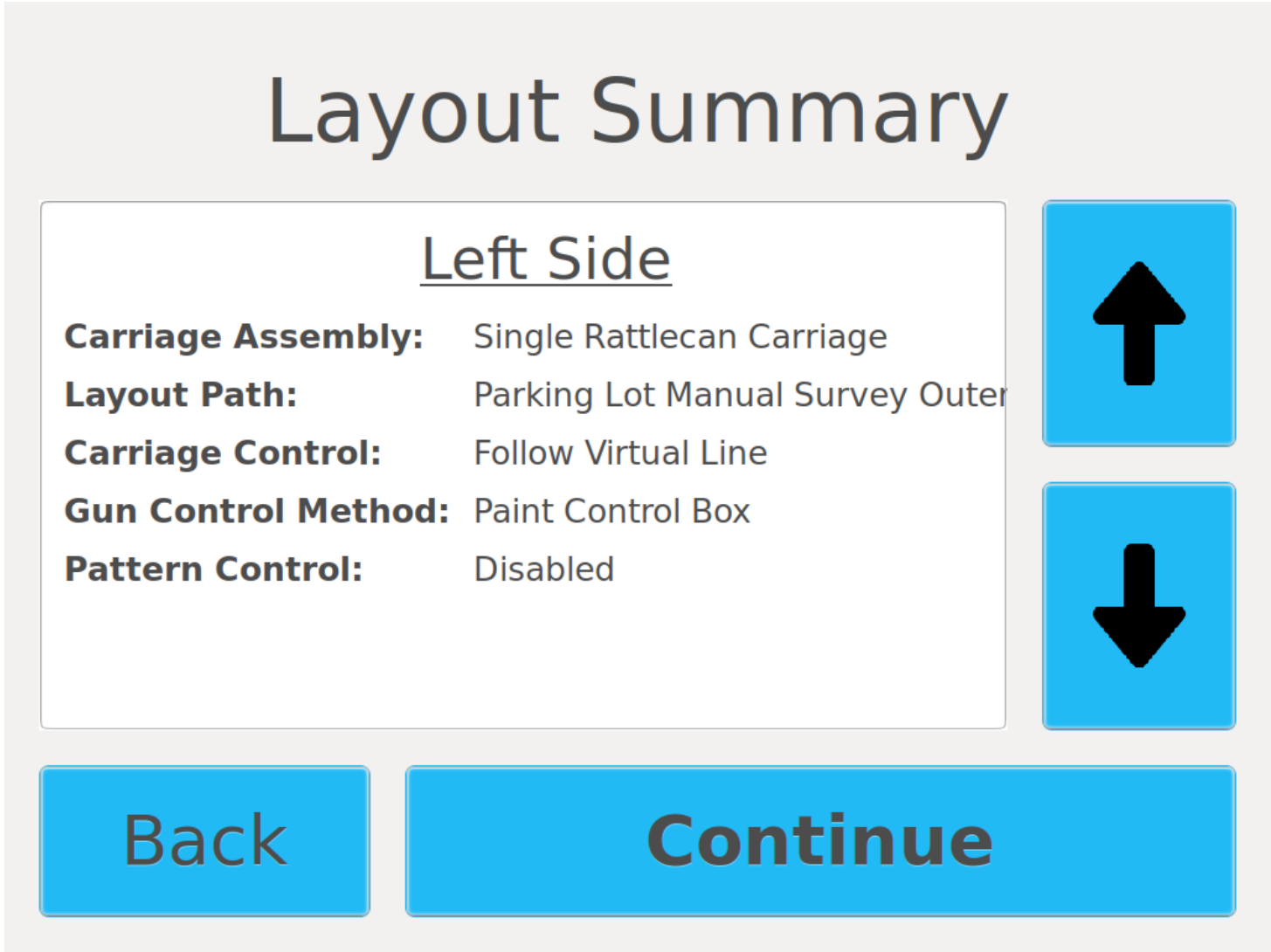
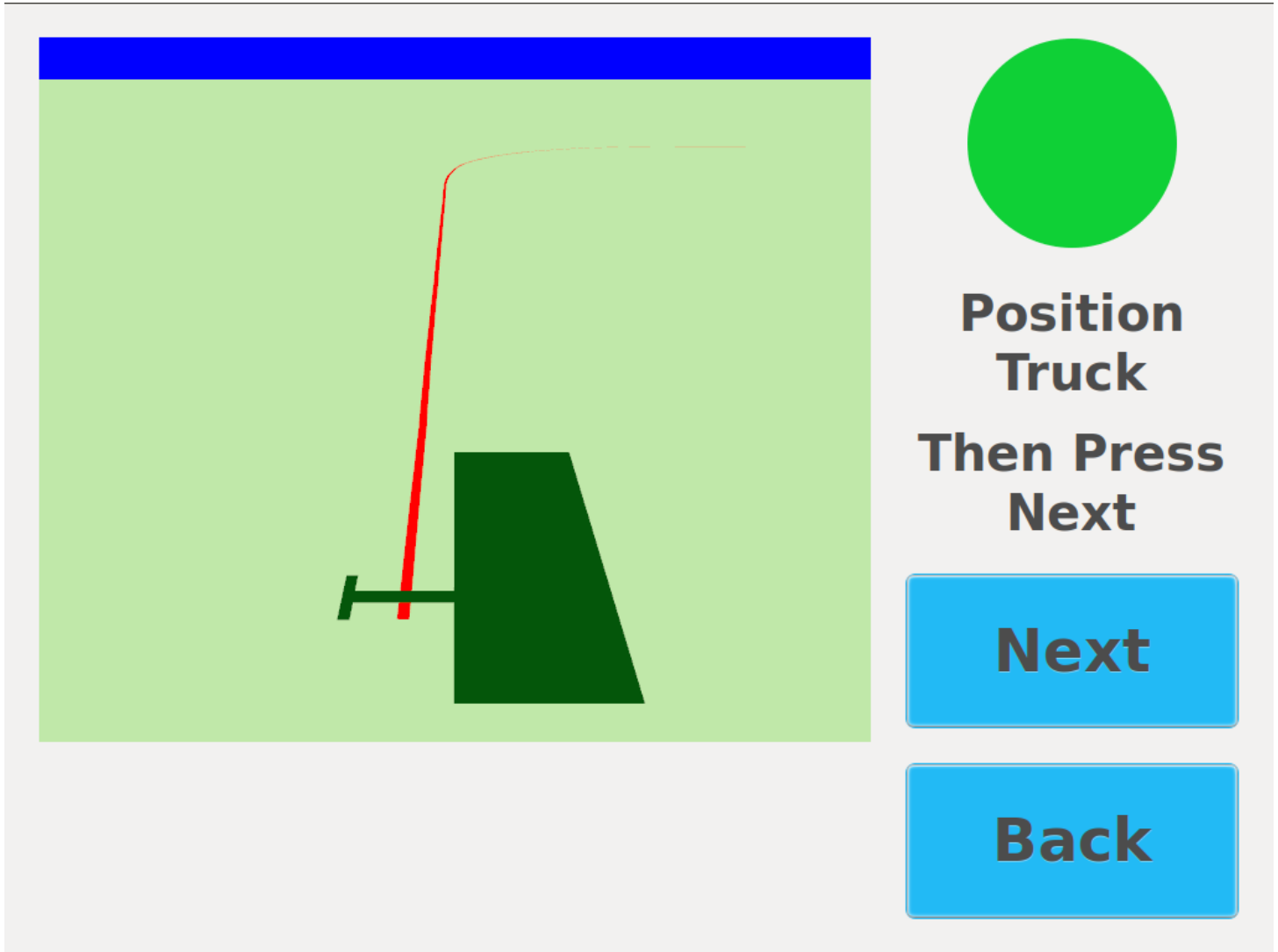
- **Layout Path:** This is the name of the selected virtual line.
- **Carriage Control:** This shows how the carriage will follow the line. It will either follow the line directly or at a constant offset.
- **Gun Control Method:** This tells the user if the layout dots will be controlled by the LimnTech system or a separate paint control box.
- **Pattern Control:** This shows whether PAS is enabled or disabled for this layout job.



Position Truck

- This screen allows the user to locate the virtual line they wish to layout.
- If your truck build requires PTO or a pony motor to be started for layout, make sure they are started now.
- Make sure air is being fed to the carriage assembly.

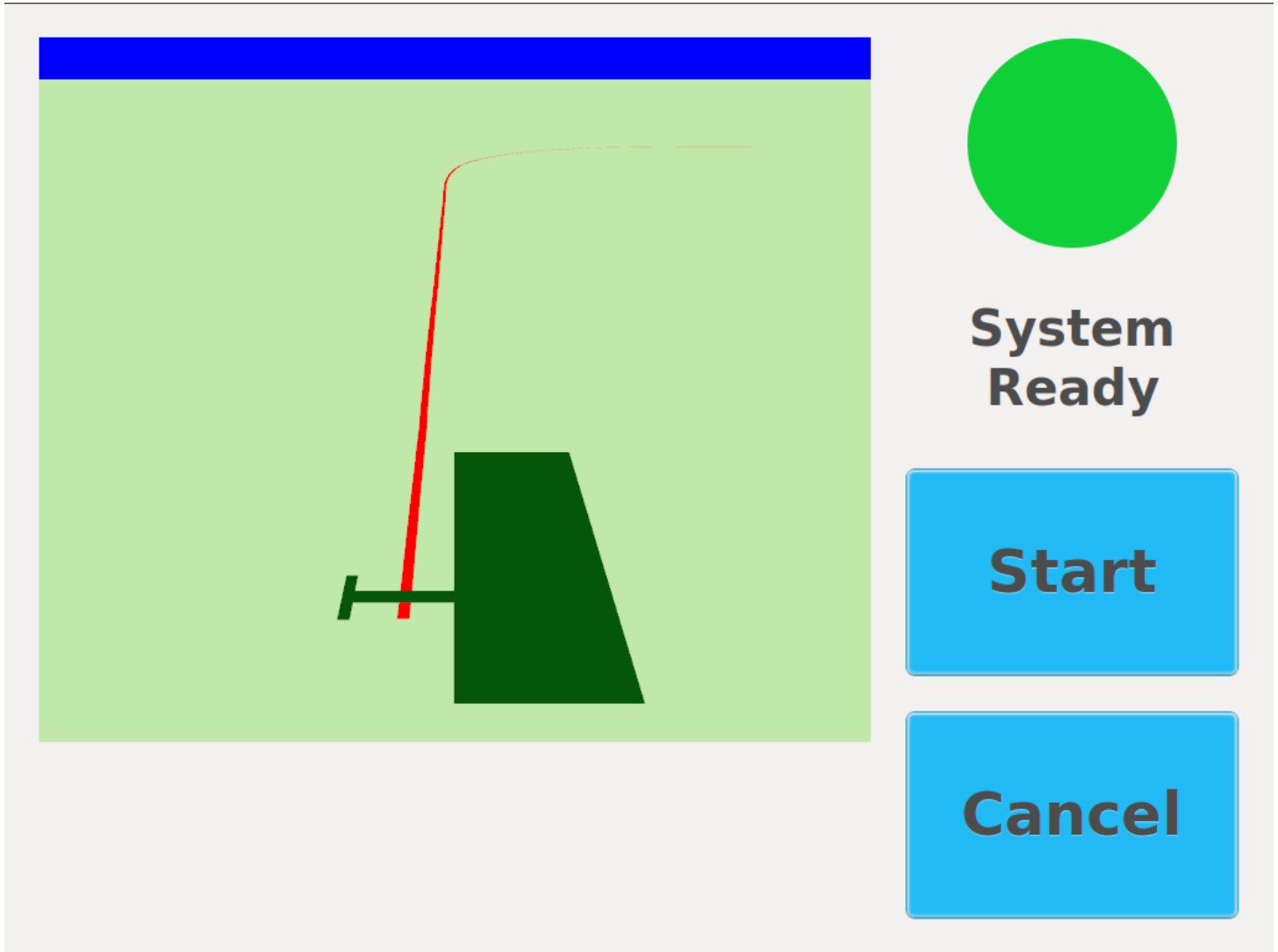


Check Skip-Line Box

- At this time make sure that the Skip-Line box is set for Gun 1 to do skips and you have set the proper length and spacing on the Skip-Line box

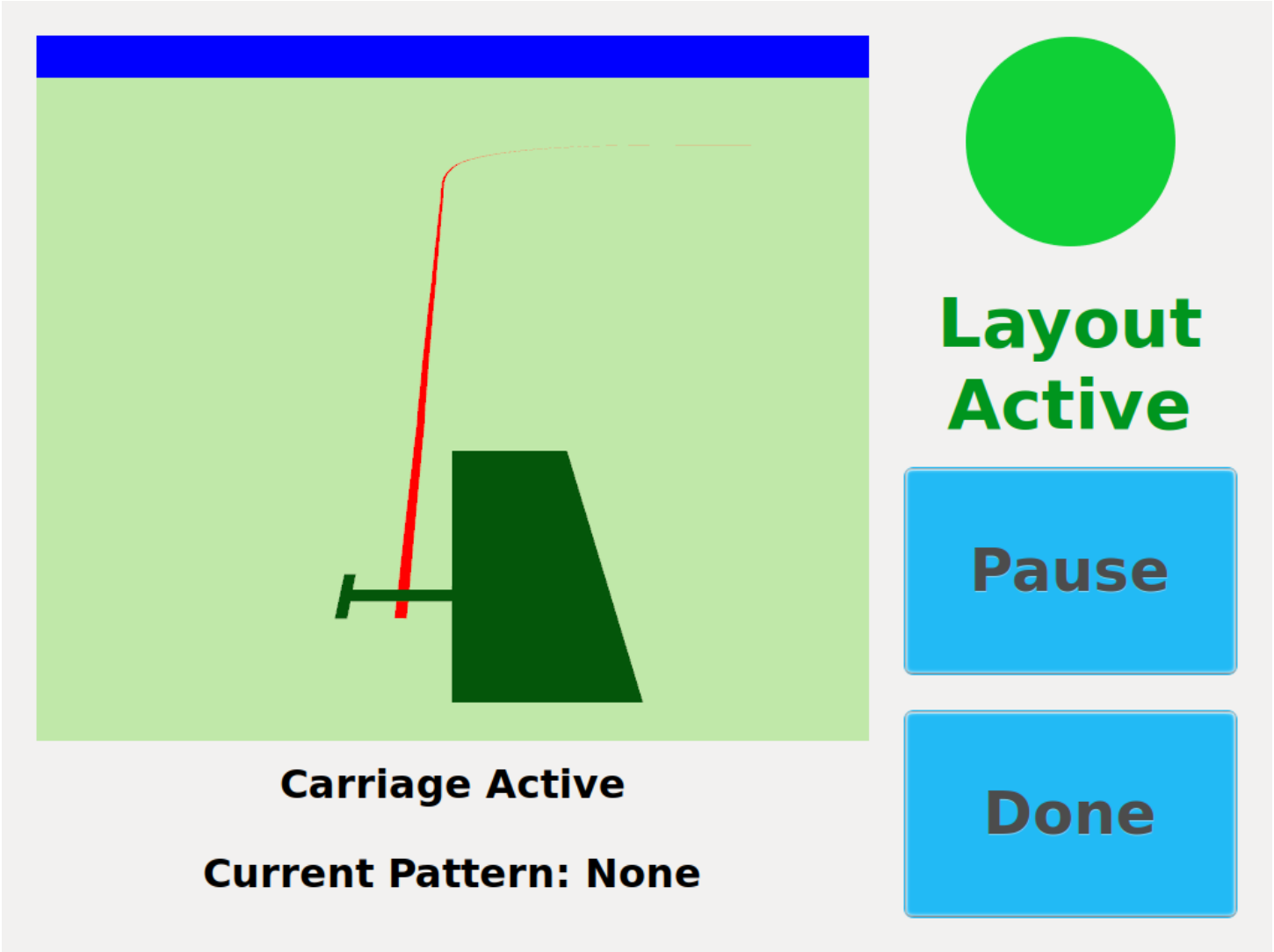
Layout Idle

- Press start to have the system automatically move the carriage over the virtual line.



Layout Active

- The single rattle can will align with the virtual line and place the layout dots.
- Press **Pause** to stop painting and retract the carriage.
- Press **Done** to exit the Layout job.



Layout Active

- At this point the layout is complete. Hit home to return to the main screen.