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AG MANAGEMENT SOLUTIONS

## **iTEC Pro** **Troubleshooting and Optimization Guide**

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# iTEC Pro Troubleshooting and Optimization Guide

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### 1) Types of iTEC turns

- Following are some common iTEC Pro end turns that will be referred to in this document.

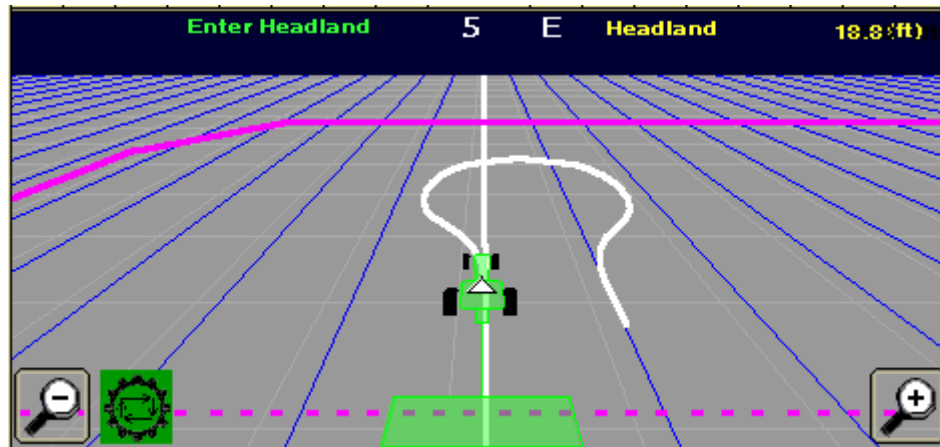


Figure 1. Symmetrical Light bulb Turn (0 ft Control Point or using 3-pt hitch)  
(Turn Radius > 1/2 of Track Spacing)

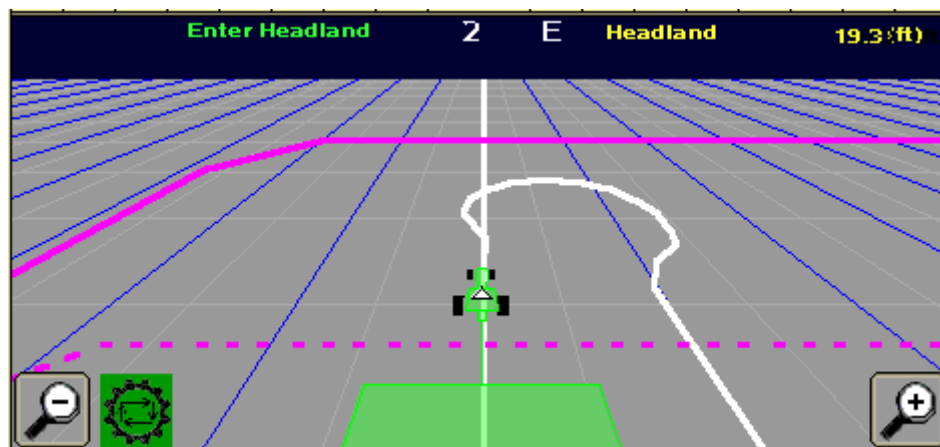


Figure 2. Non-symmetrical Light bulb Turn (Normal Control Point)  
(Turn Radius > 1/2 of Track Spacing)

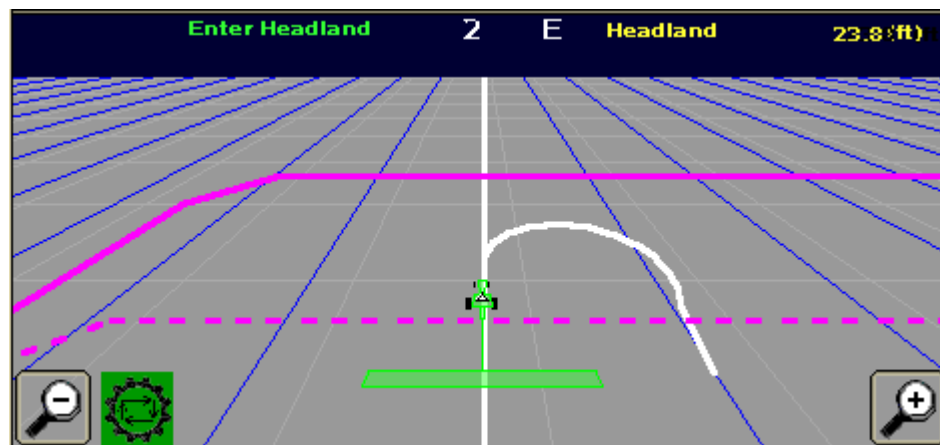


Figure 3. Simple Turn  
(Turn Radius = 1/2 of Track Spacing)

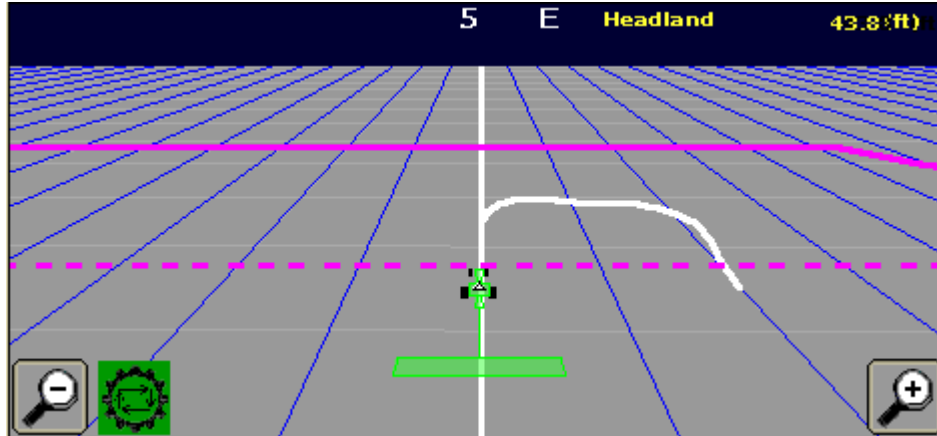


Figure 4. Extended Simple Turn  
(Turn Radius < 1/2 of distance between tracks)

## 2) Implement Turn Radius vs. Machine Turn Radius

- iTEC Pro uses the largest of these two values to generate the end turn in the headlands. For example, with the settings shown in Figures 5 & 6, 23' would be used by iTEC Pro.
- Keep this in mind when trying to raise or lower the Turn Radius for tuning purposes. In Figure 5, no adjustment to the turn will be made by changing the Implement Turn Radius unless it is greater than 23 ft, since that is what the Machine Turn Radius is set to (Figure 6).

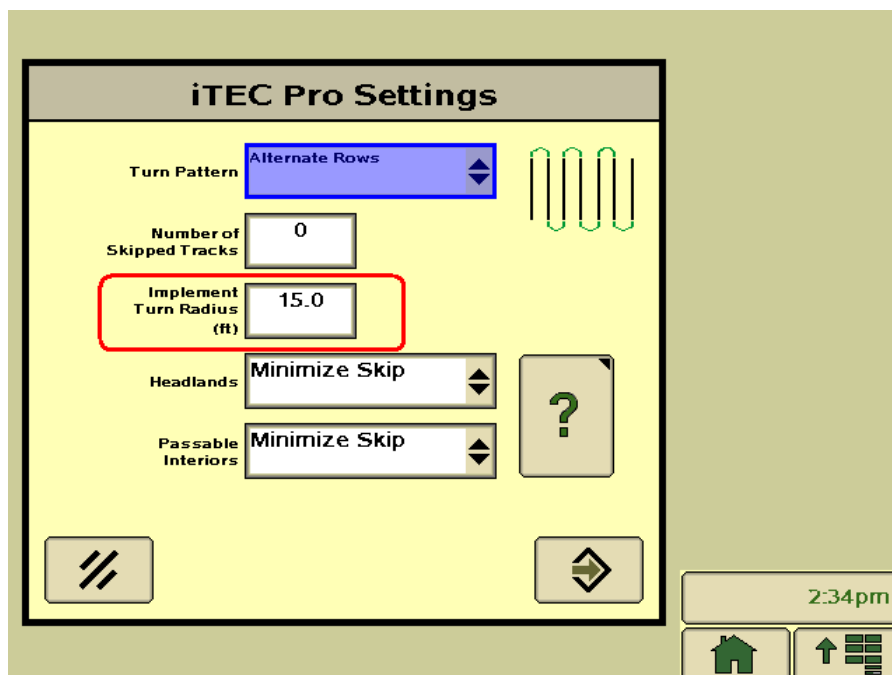


Figure 5

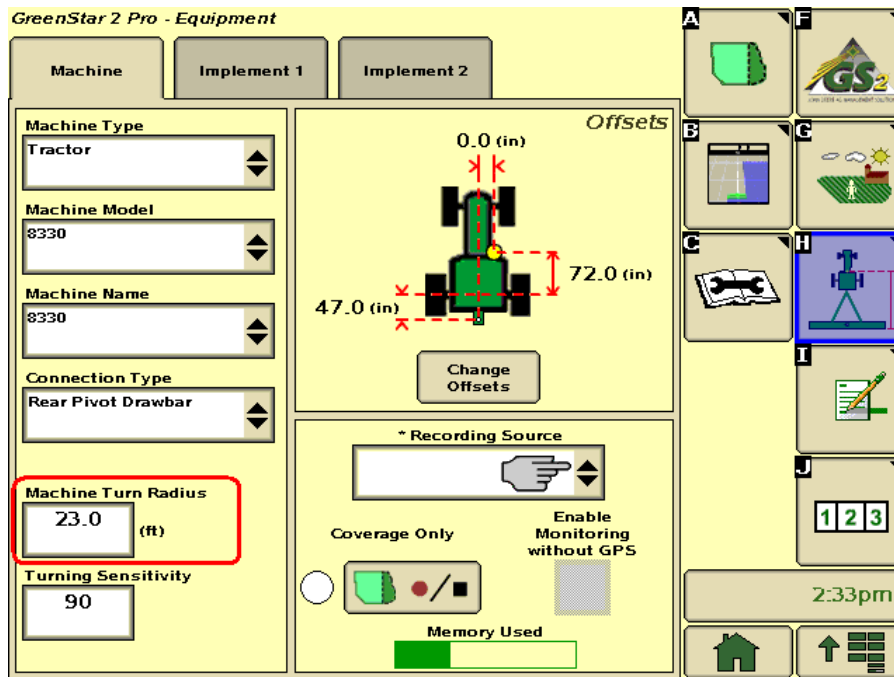


Figure 6

3) **Collision Detection warning appears at every turn** (figure 7)

- Decrease End Turn Offset (figure 8)
- Decrease Turn Radius (figure 9)
- Increase headland size (figure 10)
- Skip tracks to create a “simple” turn (figure 4 & 11)

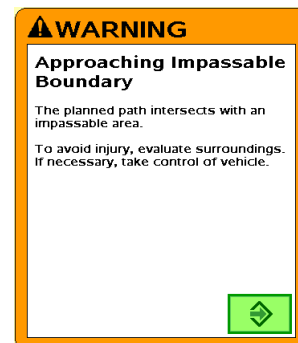


Figure 7

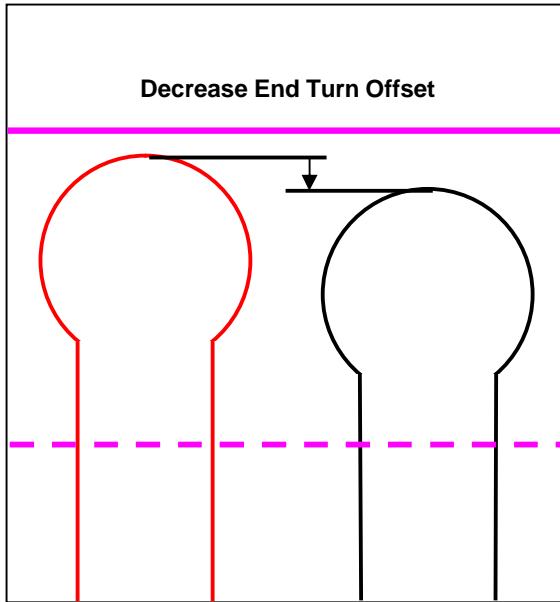


Figure 8

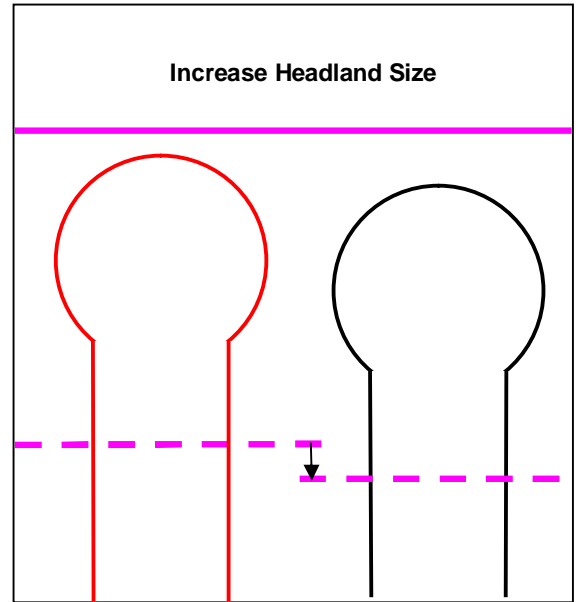


Figure 10

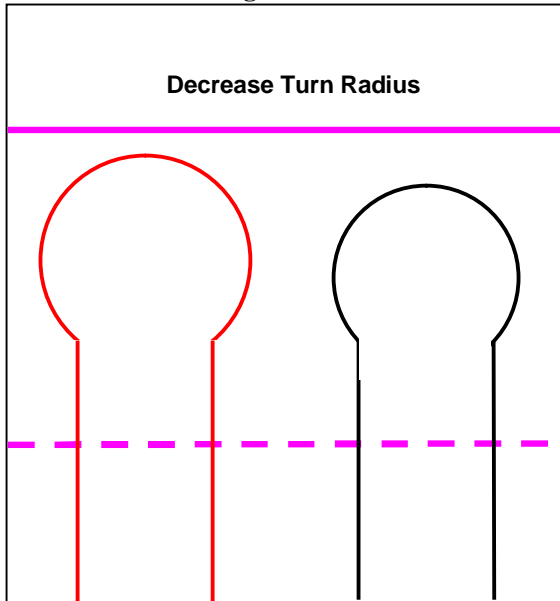


Figure 9

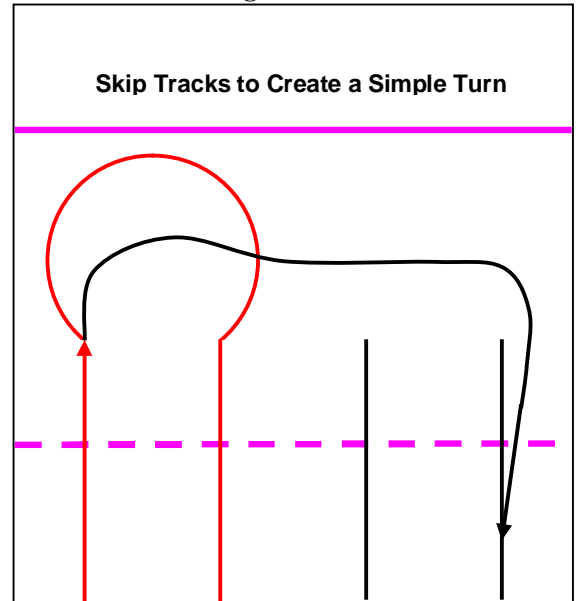


Figure 11

**4) Headland size iTEC requires is larger than desired**

- If possible, use “Simple” turns
  - Use smallest Turn Radius possible (see Figures 3 & 4)
  - Skip enough tracks to obtain a “simple” turn (see Figures 4 & 11)
- Use an End Turn Offset to shift the turn into the field (see Figure 8)

**5) Tractor does not track very well on end turns (off-track error gets large)**

- NOTE: iTEC Pro end turns will be more consistent when the off-track error is minimized throughout the end turns, and especially near the end of the turn.
- If tractor is getting off-track in the middle of the turn (see point A in Figure 12), increase the Turn Radius until the tractor is able to stay on track.
- If tractor is getting off-track at the beginning or end of the turn (see point B in Figure 12), try decreasing the Turn Radius until the tractor is able to stay on track. If the Turn Radius is decreased too far, it may start to get off track in the middle of the turn.
  - Decreasing the implement Control Point (D) offset will also create end turns that are easier for the tractor to track on at the start and end of the turns with pull type implements. However, this can result in undesirable guess row performance. An increased End Turn Offset may help eliminate a bad guess row.
  - If tractor can not turn wheels quick enough in these areas, the ground speed may be reduced to allow more time for the wheels to turn. Once the wheels are turned, increase ground speed again for increased productivity.

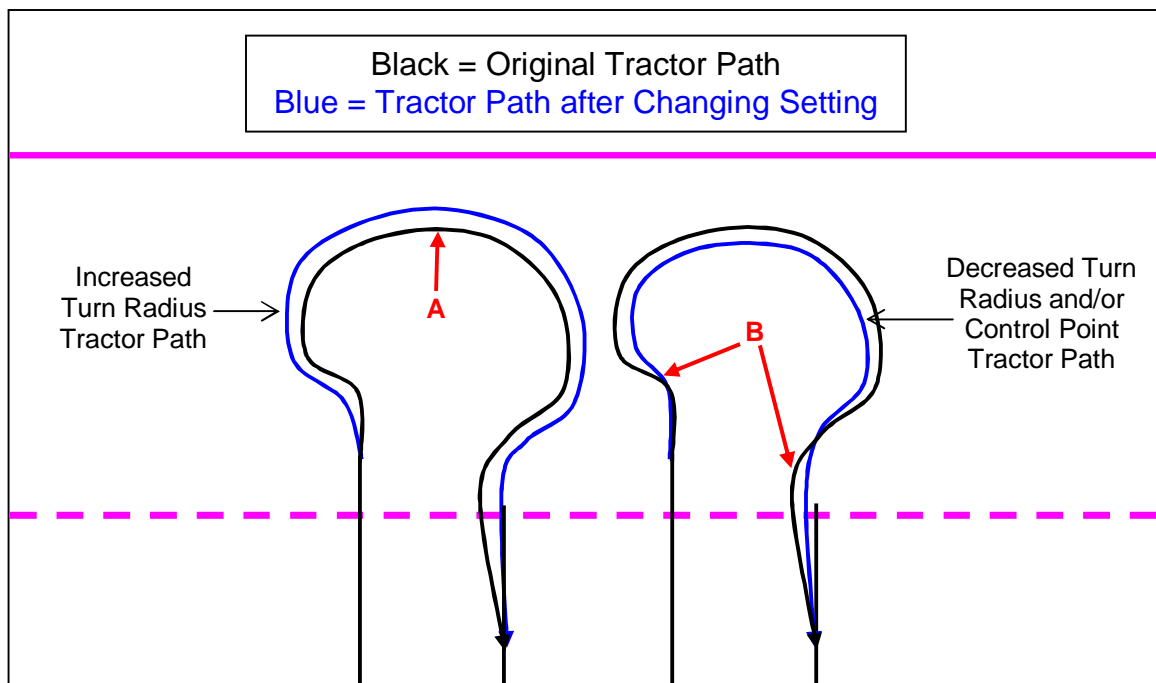


Figure 12

6) **Guess rows at the headland boundary are too wide or narrow (drawn implements)**

- For “simple” turns, increase the Control Point to widen guess rows and decrease the Control Point to narrow them (Figure 13)

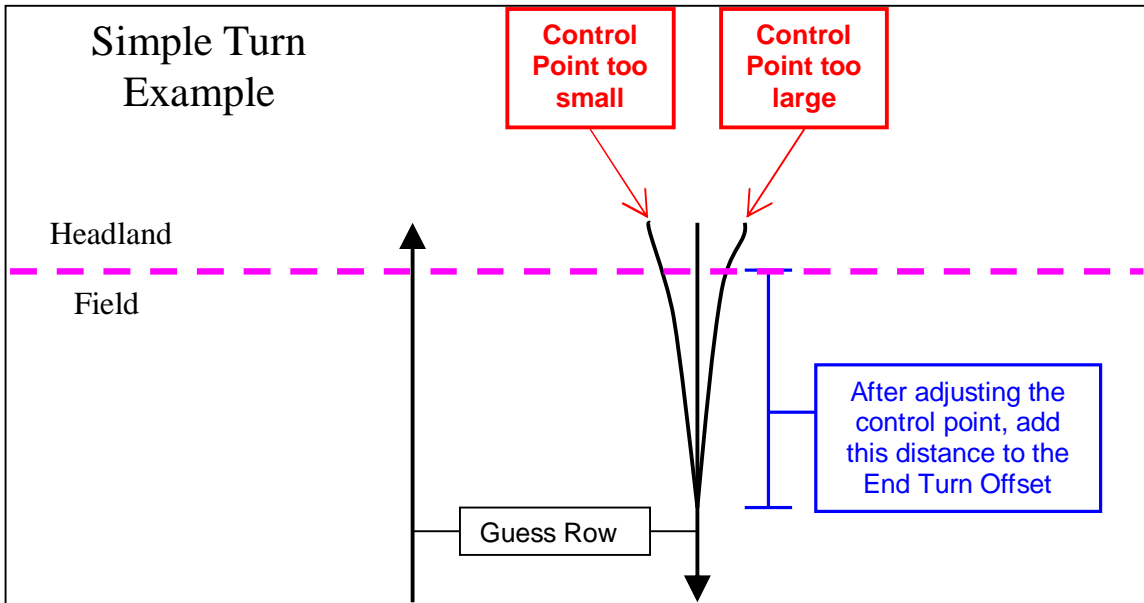


Figure 13

- For light-bulb turns, increase the Control Point to narrow the guess rows and decrease to widen the guess rows. (Figure 14)

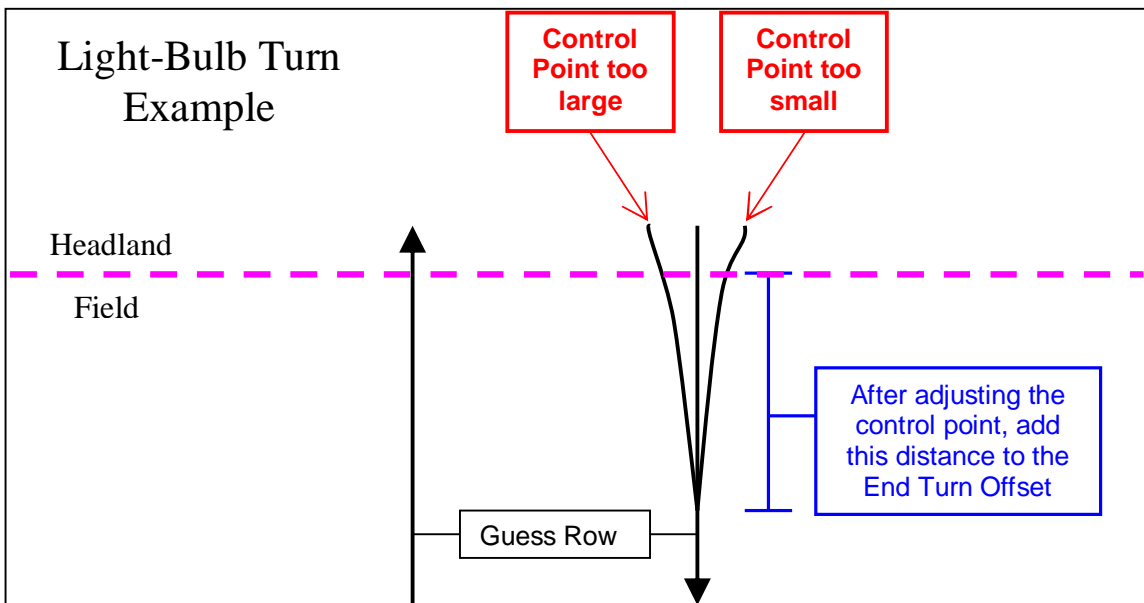


Figure 14

- Additionally, the End Turn Offset can be adjusted to improve guess row performance (as shown in Figures 13 & 14)

### 7) Headland implement raise/lower is inconsistent

- Slower speeds while approaching and crossing the headland will result in better raise/lower accuracy and end-turn performance.
- Multiple speed and/or gear changes can be configured in each sequence as shown in Figures 15 & 16.

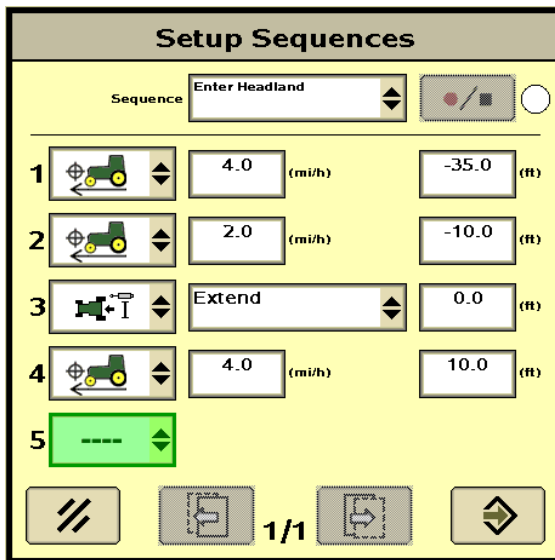


Figure 15

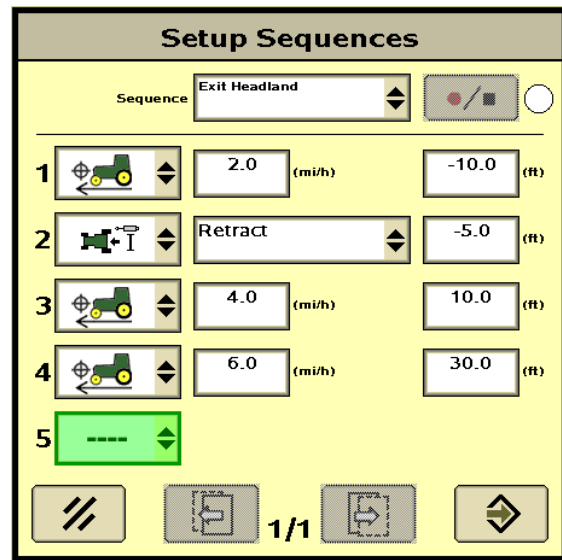


Figure 16

### 8) Implement is not raising and lowering at desired location

- Adjust the Function Distance for controlling the implement raising and lowering in the Setup Sequences to optimize where you want the implement to go in and out of the ground. Sequence Offset may be changed instead of Function Distance, if desired, but this will shift each Function Distance by that amount.
- Changing the machine speed and the SCV or 3-pt hitch flow rate will also affect where the implement goes in and out of the ground.
- Example: You notice that the planter should come out of the ground 5 feet earlier when entering the headland and you are using the settings in Figures 15 & 17. Change the SCVI function offset (Figure 15) to -5 ft. or change the Enter Headland Sequence Offset (Figure 17) to -5 ft.

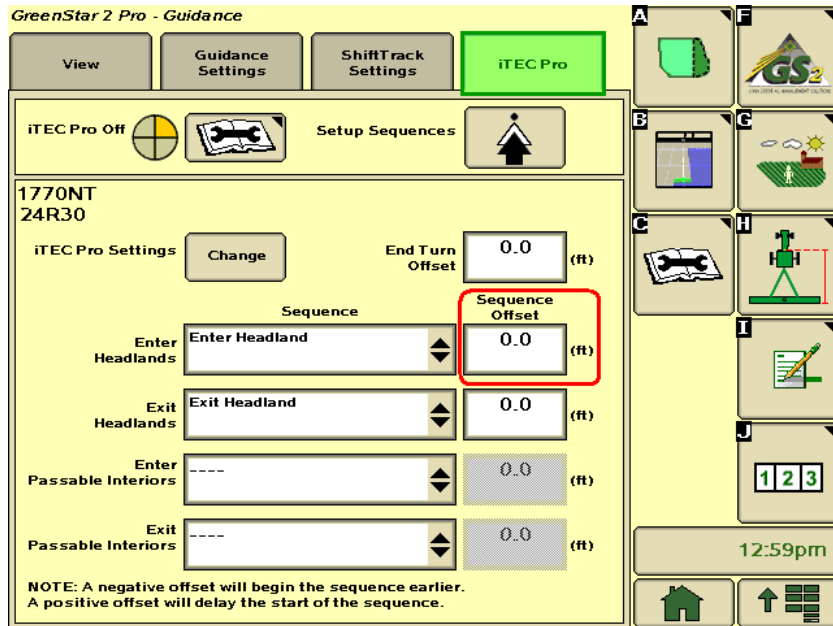


Figure 17