

# intelligent Total Equipment Control Pro



**JOHN DEERE**

AG MANAGEMENT SOLUTIONS

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# Stellar Support Resources

- Product Information
- Quick Reference Guide
- Operator Manual
- Stellar Support
- Simulators



# Requirements

## Requirements

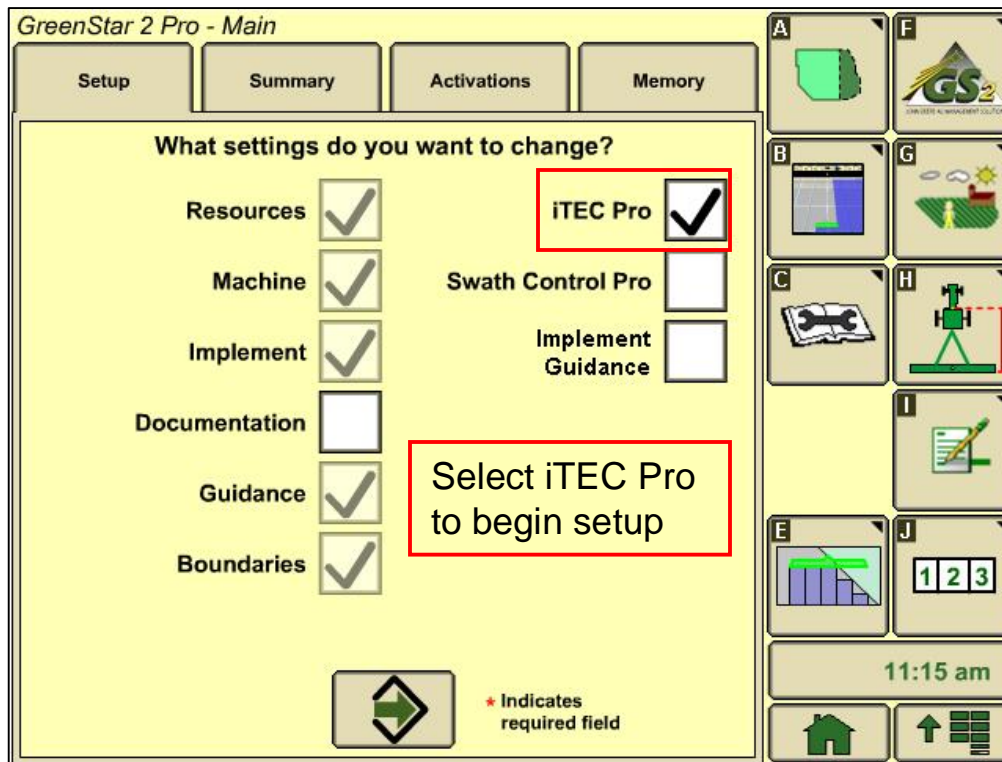
- **GS 2 Display**
- **Signal - SF1 and up**
- **AutoTrac activation (for automated end turns)**
- **iTEC Pro Module – GS2 Display Activation**
- **Display and Controller Software Updates**
- **8x30, 8x30T, 8xxxR, 8xxxRT, 9x30, 9x30T**



# Advanced Setup Tool

We will be using the Advanced Setup Tool to guide through the setup and tuning of iTEC Pro.

**Note:** The path listed on the side of the page will also guide to the same step of setup



Menu



GS 2 Pro



# Resources Setup

1. The first step is to setup your resource. You do this by creating a client name, farm name, and field name.

**Note:** Red asterisk shows what items are required to be filled out.

Currently on page 1 of 8 of the Advanced Setup Tool.

Once setup on current page is complete, pressing the next page button will guide you to the next step of setup.

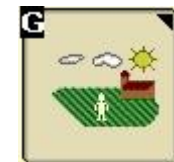
Menu



GS 2 Pro



Resources



# Machine Setup

2 & 3. The next step is to setup your machine and implement. These settings will be saved under the machine or implement **name**.

When setting up iTEC Pro for the first time, it is recommended that operators create a new **specific** machine name for their iTEC Pro vehicle.  
\*All dimensions set for this vehicle will be used for iTEC Pro operations.

GreenStar 2 Pro - Equipment

Machine

\*Machine Type  
Tractor

Machine Model  
8x30

\*Machine Name  
8530

\*Connection Type  
Rear Pivot 2-pt

\*Machine Turn Radius  
30.0 (ft)

\*Turning Sensitivity  
70

Offsets

0.0 (in)

46.9 (in)

72.0 (in)

\* Change Offsets

\* Recording Source

Documentation and Coverage

Enable Monitoring without GPS

Memory Used

Input machine type and name. Enter GPS receiver offsets. Select connection type to your implement and select a Recording Source to use Documentation.

2 / 8

Exit Setup

9:32am

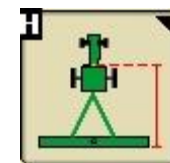
Menu



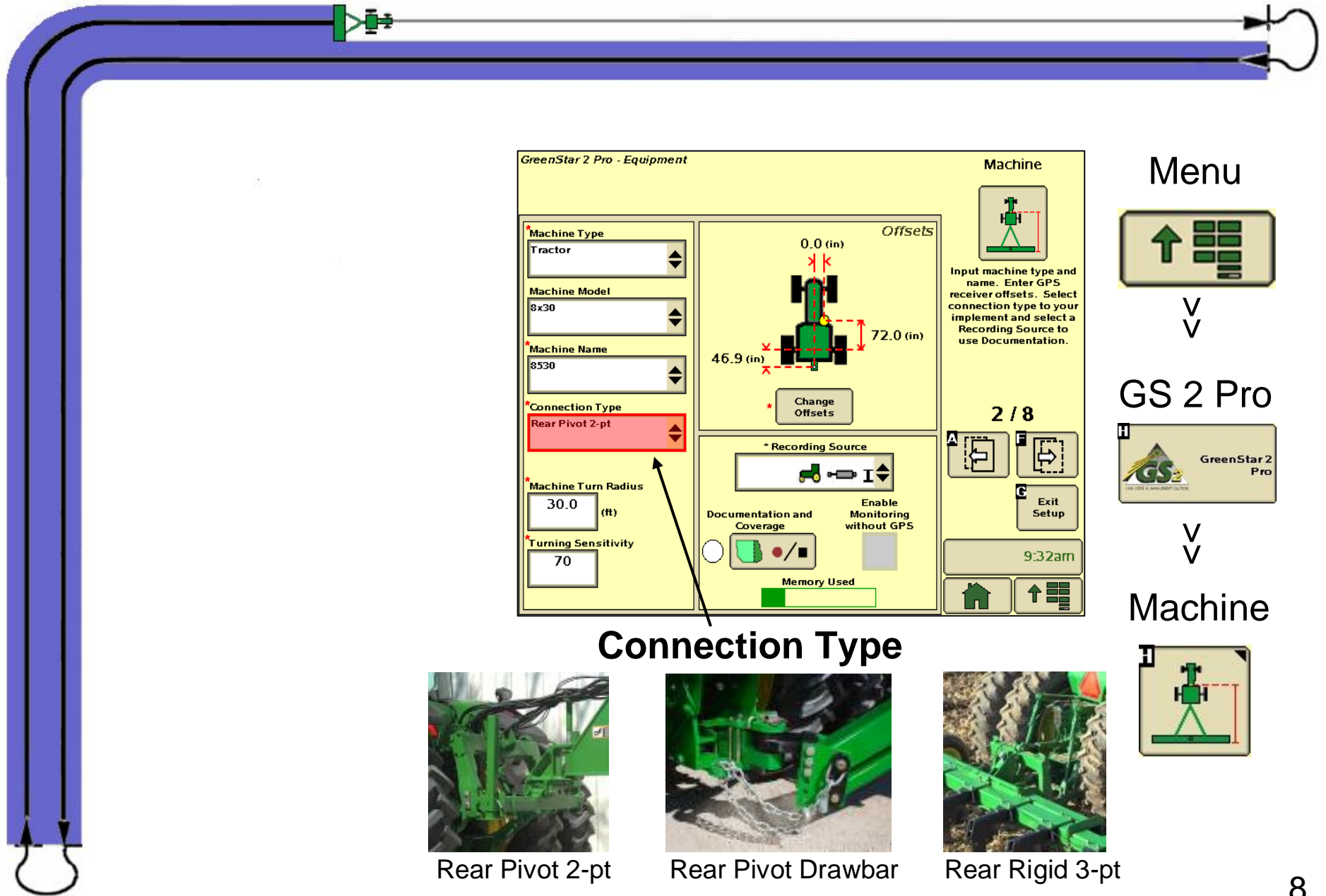
GS 2 Pro



Machine



# Machine Setup



**GreenStar 2 Pro - Equipment**

**Machine**

Input machine type and name. Enter GPS receiver offsets. Select connection type to your implement and select a Recording Source to use Documentation.

2 / 8

9:32am

Exit Setup

Memory Used

**Machine Type**  
Tractor

**Machine Model**  
8x30

**Machine Name**  
8530

**Connection Type**  
Rear Pivot 2-pt

**Machine Turn Radius**  
30.0 (ft)

**Turning Sensitivity**  
70

**Offsets**

0.0 (in)

46.9 (in)

72.0 (in)

Change Offsets

**\* Recording Source**

Documentation and Coverage

Enable Monitoring without GPS

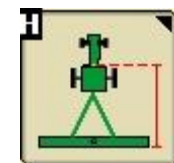
Menu



GS 2 Pro



Machine



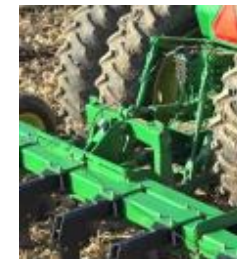
**Connection Type**



Rear Pivot 2-pt

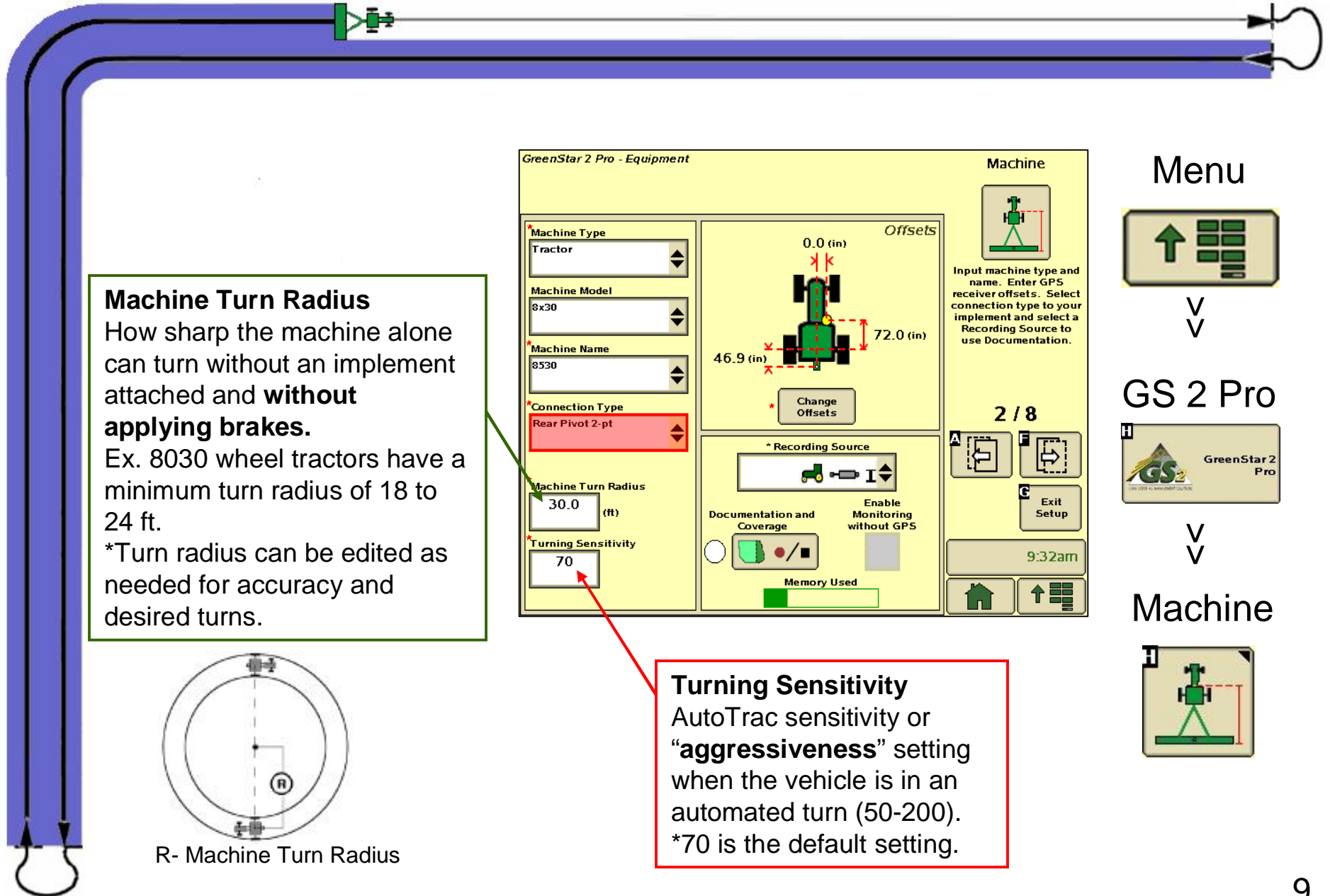


Rear Pivot Drawbar



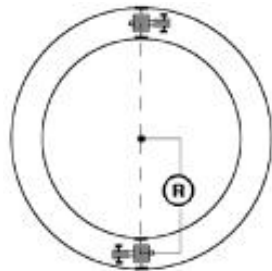
Rear Rigid 3-pt

# Machine Setup



## Machine Turn Radius

How sharp the machine alone can turn without an implement attached and **without applying brakes**.  
 Ex. 8030 wheel tractors have a minimum turn radius of 18 to 24 ft.  
 \*Turn radius can be edited as needed for accuracy and desired turns.



R- Machine Turn Radius

GreenStar 2 Pro - Equipment

**Machine Type**  
Tractor

**Machine Model**  
8x30

**Machine Name**  
8530

**Connection Type**  
Rear Pivot 2-pt

**Machine Turn Radius**  
30.0 (ft)

**Turning Sensitivity**  
70

**Offsets**

Change Offsets

**Recording Source**

Documentation and Coverage

Enable Monitoring without GPS

Memory Used

**Machine**

Input machine type and name. Enter GPS receiver offsets. Select connection type to your implement and select a Recording Source to use Documentation.

2 / 8

Exit Setup

9:32am

**Turning Sensitivity**  
 AutoTrac sensitivity or "aggressiveness" setting when the vehicle is in an automated turn (50-200).  
 \*70 is the default setting.

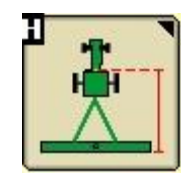
## Menu



## GS 2 Pro



## Machine



# Machine Setup

## Machine Offsets

**Machine Offsets**

A 0.0 (in)

B 72.0 (in)

C 46.9 (in)

Non-Steering Location: Rear Axle

A Lateral distance from center-line of machine to GPS receiver

B In-line distance from non-steering axle to GPS receiver

C In-line distance from non-steering axle to connection point

9:32am

Change Offsets

**We can enter or edit the machine offsets here.**

- You can physically measure the equipment
- Dimensions for common machines listed in the iTEC OM
- GSDNet (through Apex).

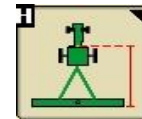
## Menu



GS 2 Pro



Machine



0.0 (in)

72.0 (in)

46.9 (in)

Offsets

Change Offsets

# Apex-Initial Settings

The image displays two software windows. The top window, titled "Add a new machine", contains the following fields:

- Type: Tractor
- Model: 8x30
- Name: 8030
- Serial Number: (empty)
- Machine Settings: Default Machine Settings: 8530
- Connection Type: Rear Pivot Drawbar
- A: 0.0 in
- B: 72.0 in
- C: 46.9 in
- Turn Radius: 22.0 ft
- Turn Sensitivity: 70
- Non Steering Location: Rear Axle

The bottom window, titled "GSDNet Reference Data", shows a table of available default machine settings:

Name	Match	Receiver Offset
8130	No	0.0 in
8230	No	0.0 in
8330	No	0.0 in
8430	No	0.0 in
8530	Yes	0.0 in

A note box on the right states: **Note:** Apex 2.0 has the capability to view the dimensions, but an operator is not able to input in the values at this time. The boxes appear grey.

**IMPORTANT :** Dimensions downloaded from GSDNet should be used as a guideline and may need to be verified by physically measuring the machine/implement. If the dimensions are not accurate, the operator will need to take the data card back to the tractor and change the dimensions on the GS2. The new dimensions will be saved under the machine/implement name and can be unloaded to Apex.

# Implement Setup

Similar to the Machine setup, it is recommended that operators create a new **specific** Implement Name for iTEC Pro.

GreenStar 2 Pro - Equipment

Implement

Implement Type: Planter  
Implement Model: 1770NT  
Implement Name: JD 24Row30

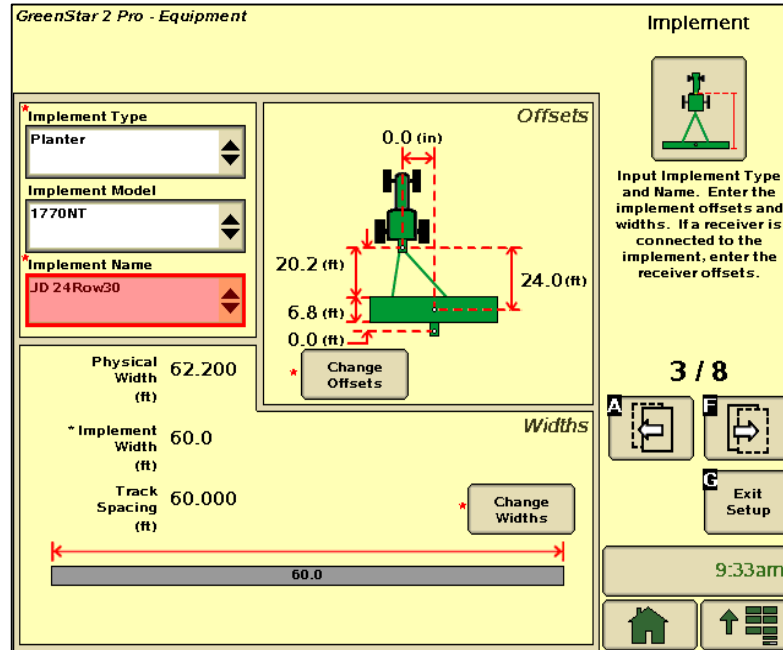
Physical Width (ft): 62.200  
\* Implement Width (ft): 60.0  
Track Spacing (ft): 60.000

Offsets: 0.0 (in), 20.2 (ft), 6.8 (ft), 0.0 (ft), 24.0 (ft)

Widths: 60.0

3 / 8

9:33am



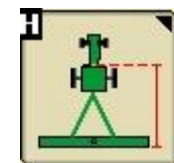
Menu



GS 2 Pro



Implement



# Implement Setup

## Implement Offsets

**Offsets**

A 20.2 (ft)

B 6.8 (ft)

C 0.0 (in)

D 24.0 (ft)

E 0.0 (ft)

**A** In-line distance from connection point to front of implement

**B** In-line distance from front to rear of implement

*A+B = Documentation/Swath Control location when in use*

**C** Lateral distance from connection point to control point of implement

**D** In-line distance from connection point to control point of implement

**E** In-line distance from connection point to connection point for 2nd implement. Value only needed if second implement is used

9:33am

**We can enter or edit the implement offsets here.**

- You can physically measure the equipment
- Dimensions for common planters listed in iTEC OM
- GSDNet (through Apex).

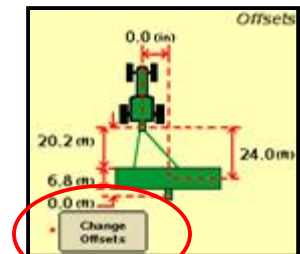
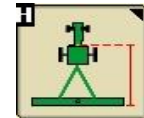
## Menu



GS 2 Pro



Implement



# GSDNet- Initial Implement Settings

**Note:** Same as machine dimensions, you can't modify values in Apex, you can do that on the GS2.

Add a new implement

Type: Planter Model: 1770NT Name: JD 24R30

Serial Number:  [Get Reference Models and Settings](#)

Implement Settings

Default Implement Settings: 24Row30

Offsets

A: 20.2 ft B: 6.8 ft C: 0.0 in D: 24.0 ft E: 0.0 ft

Widths

Physical Width: 62.200 ft Implement Width: 60.0 ft

Track Spacing: 60.000 ft

GPS Offsets

In-line distance: 0.0 ft

Lateral distance: 0.0 in

Add to list Done Cancel

GSDNet Reference Data

**GSDNet** Integrating Agriculture

Search Filters

Implement Types: Planter

Implement Model: 1770NT

Search

Available Default Implement Settings:  Select All

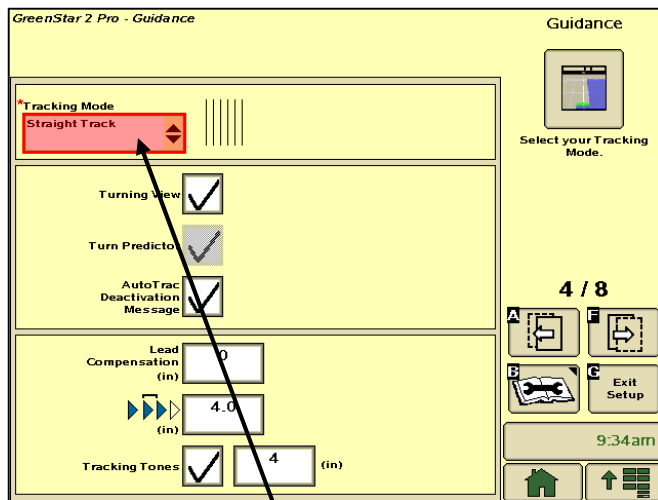
Name	Match	A*	B*
<input type="checkbox"/> 12Row30	Yes	11.6 ft	6.8 ft
<input type="checkbox"/> 16Row30	Yes	12.6 ft	6.8 ft
<input type="checkbox"/> 16Row30 Drawbar	Yes	18.0 ft	6.8 ft
<input checked="" type="checkbox"/> 24Row30	Yes	20.2 ft	6.8 ft
<input type="checkbox"/> 24Row30 Drawbar	Yes	25.6 ft	6.8 ft

Add Done Cancel

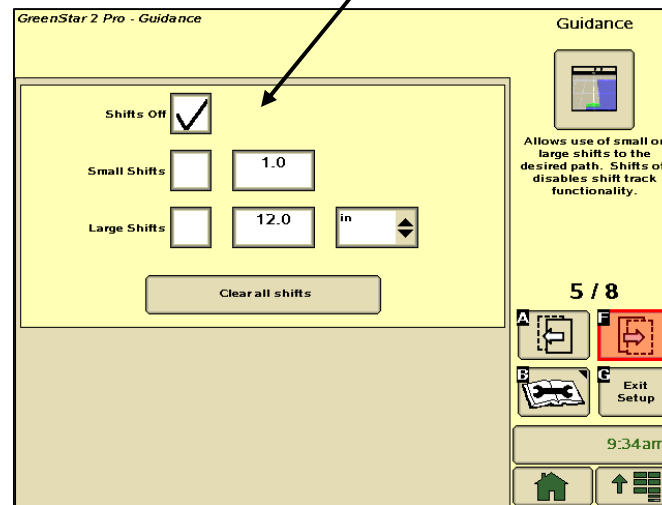
\*  
 A - In-line distance from connection point to front of the implement  
 B - In-line distance from front to rear of implement  
 C - Lateral distance from connection point to control point of implement  
 D - In-line distance from connection point to control point of implement  
 E - In-line distance from connection point to connection point for 2nd implement

# Tracking Mode and Shift Track Setup

4 & 5. Guidance and Shift Track Settings are required for guidance setup.



\*iTEC Pro will only operate in Straight Track



Select type of shifts

Menu



GS 2 Pro



Guidance



# Boundary Setup

6. Step six defines the boundaries iTEC Pro will use for operation.

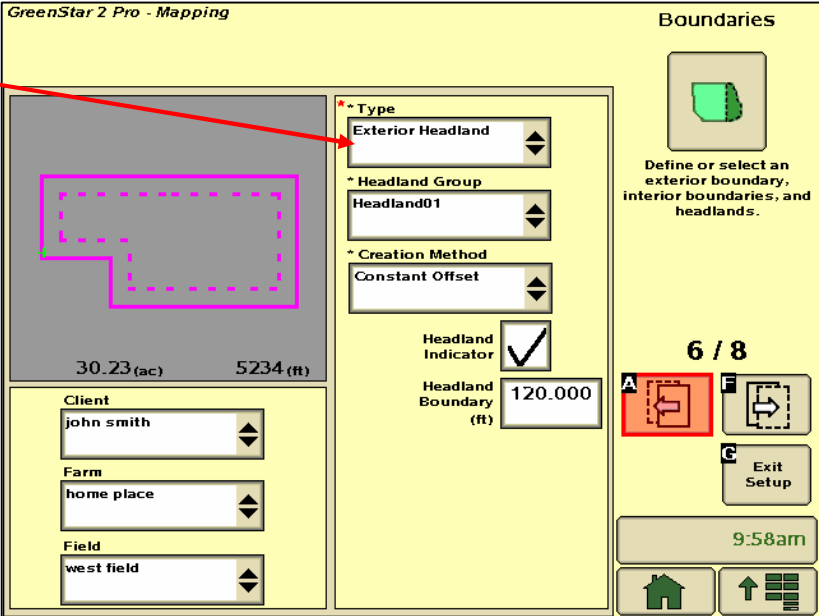
**Required Boundaries**

- Exterior
- Exterior Headland


**Creating Boundaries**

- Exterior
  - Loaded from Apex
  - Driven
- Exterior Headland
  - Top and Bottom Offset
  - Constant Offset
  - Driven

GreenStar 2 Pro - Mapping




**Menu**




↓

**GS 2 Pro**



↓

**Boundaries**



**Optional Boundaries**

- Interior
  - Passable
  - Impassible
- Interior Headland (Only Required for impassible interior boundaries)

# Boundary Setup

The screenshot shows the 'GreenStar 2 Pro - Mapping' software interface. On the left, a field map displays a field with an exterior boundary (solid line), exterior headland (dashed line), impassable interior boundary (red dashed line), and interior headland (yellow line). On the right, the 'Boundaries' menu is open, showing options for 'Type' (Interior Headland), 'Headland Group' (Headland01), 'Impassable Interior' (Pond), 'Drive Boundary', and 'Headland Boundary (ft)' (100.000). The interface also shows a 'Menu' button, 'GS 2 Pro' logo, and 'Boundaries' button.

**Exterior Boundary**  
(Required, **Solid line.**) The outer perimeter of the field which cannot be crossed with the vehicle and implement.

**Exterior Headland**  
(Required, **Dashed line.**) The end rows or turn rows along the ends and sides of a field that will prompt the user to complete sequences and/or turns.

**Impassable Interior Boundary**  
The perimeter of an area inside the field which is not farmed, and cannot be crossed with the vehicle and implement. (e.g. pond or rock)

**Interior Headland**  
(Required if Impassable Interiors are used) The headlands or turn rows around an Impassable Interior Boundary that will prompt the user to complete sequences and/or turns.

**Passable Interior Boundary (Yellow line.)** The area inside the field which is not farmed, but **can** be crossed with the vehicle and implement (e.g. waterway) that will prompt the user to complete sequences.

Menu

GS 2 Pro

Boundaries

# Boundary Setup

## Exterior Boundary

### Exterior Boundary

(Required, **Solid line.**) The outer perimeter of the field which cannot be crossed with the vehicle and implement.

### To Define Exterior Boundary

#### ➤ 2 options for Exterior Boundary

- Use boundaries setup in Apex or have previously recorded
- Record new

#### ➤ Tips for recording new boundaries or redefining boundaries;

- Press **Record/Pause** button after vehicle begins moving
- Pause recording when toggling recording position

• **Stop** recording prior to the point recording was started. \*Make sure where recording was stopped does not intersect where it was started.

• Be sure to enter the **Boundary Offset** (distance from the receiver to the edge of the field). This can be done the first pass around the field and would usually be half of the implement width or track spacing.

The screenshot shows the 'GreenStar 2 Pro - Mapping' interface. At the top, it says 'Boundaries'. Below that, there's a map showing a field boundary. To the right of the map, there's a dropdown menu for 'Type' set to 'Exterior'. Below that, there's a 'Boundary Offset' field set to '0.000 (ft)'. At the bottom, there's a 'Recording' section with a 'Stop' button circled in red. On the right side of the screen, there's a 'Menu' button and an 'Exit Setup' button. The time '9:58am' is displayed at the bottom right.

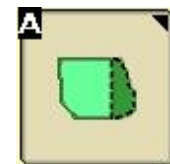
### Menu



### GS 2 Pro



### Boundaries



# Boundary Setup

## Exterior Headland

### Exterior Headland

(Required, **Dashed line.**)  
Once an exterior boundary has been defined, exterior headlands can be created. These are the boundaries that will control sequences and turns.

### Headland Group

- Creating headland groups can be useful to allow for multiple headlands to be used in one field or the same headlands to be used in multiple fields.
- Different headland groups could also be created for implements of different widths or requiring a different number of headland passes.

### Creation Methods for Exterior Headland

- Top and Bottom Offset
- Constant Offset
- Driven

### Menu



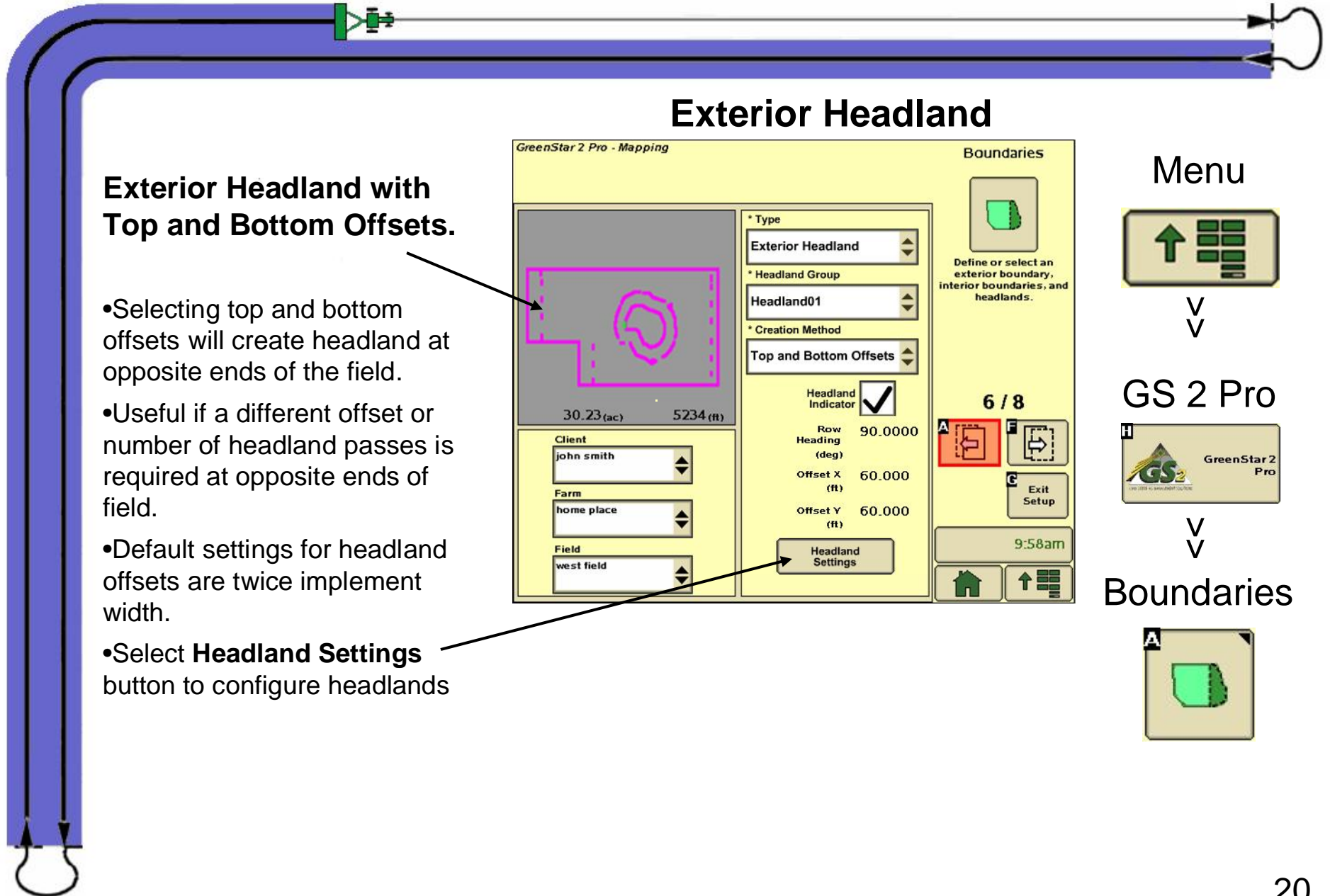
### GS 2 Pro



### Boundaries



# Boundary Setup



## Exterior Headland with Top and Bottom Offsets.

- Selecting top and bottom offsets will create headland at opposite ends of the field.
- Useful if a different offset or number of headland passes is required at opposite ends of field.
- Default settings for headland offsets are twice implement width.
- Select **Headland Settings** button to configure headlands

## Exterior Headland

GreenStar 2 Pro - Mapping

Boundaries

Define or select an exterior boundary, interior boundaries, and headlands.

6 / 8

9:58am

Client: john smith

Farm: home place

Field: west field

Type: Exterior Headland

Headland Group: Headland01

Creation Method: Top and Bottom Offsets

Headland Indicator:

Row Heading (deg): 90.0000

Offset X (ft): 60.000

Offset Y (ft): 60.000

Headland Settings

30.23 (ac) 5234 (ft)

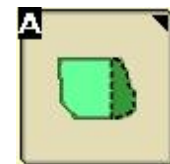
## Menu



## GS 2 Pro



## Boundaries

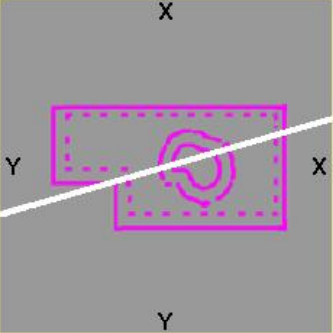




# Headland Settings

If the row heading is greater than 15 degrees into a boundary, an external headland will be created for that side.

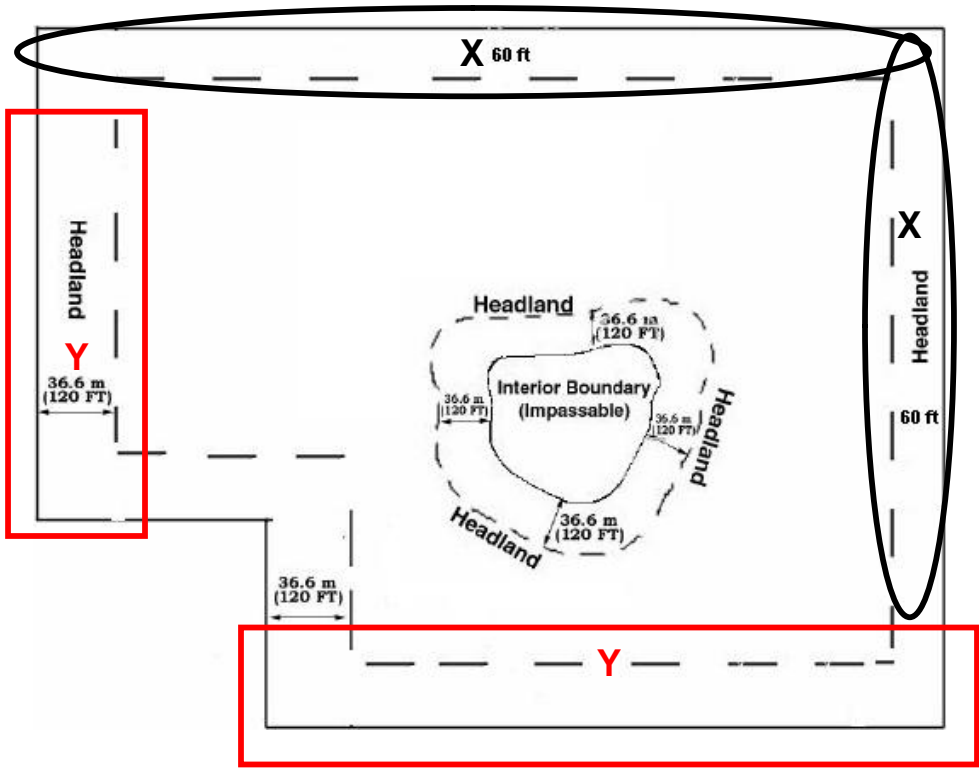
### Headland Settings



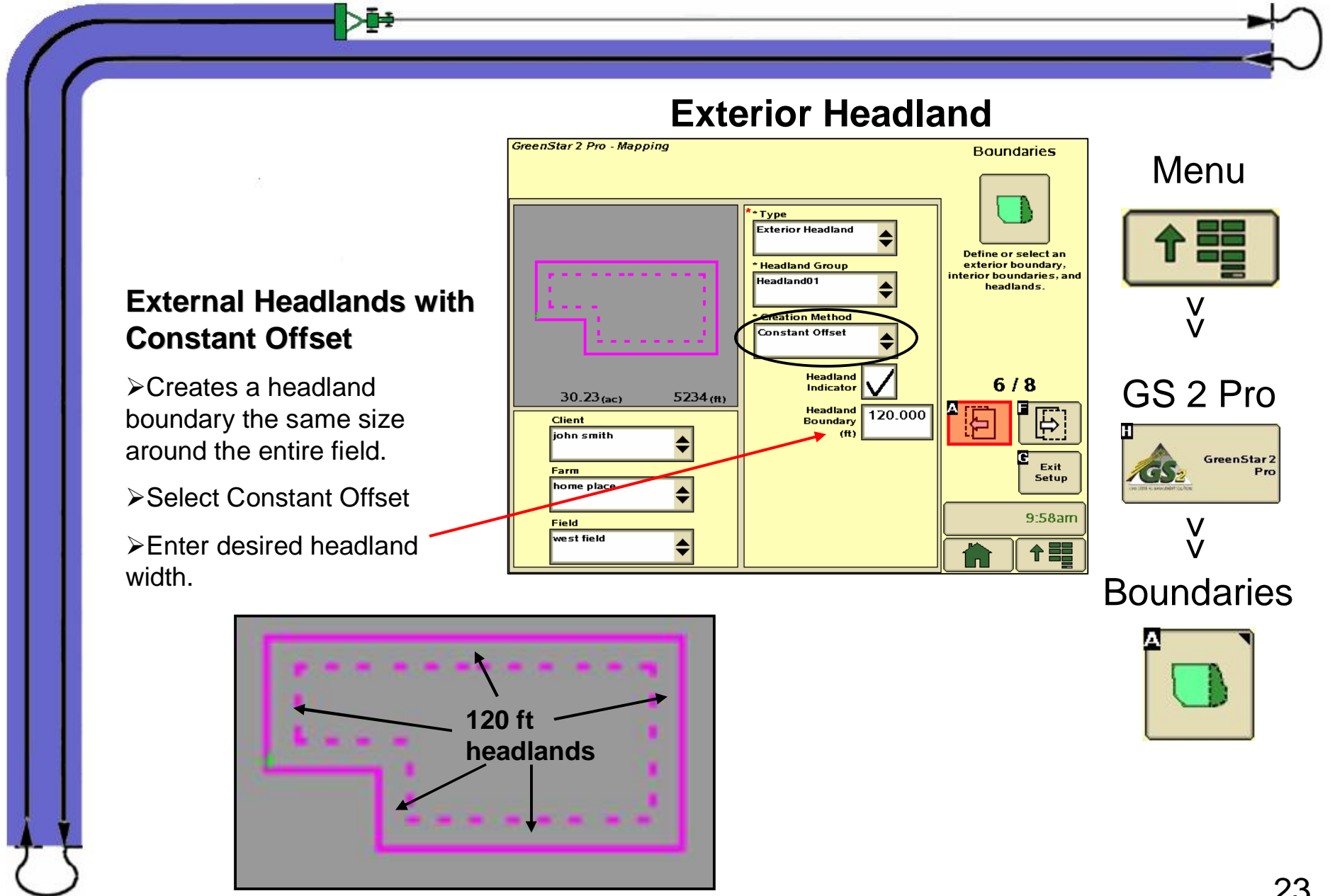
Row Heading:  (deg)

Offset X:  (ft)

Offset Y:  (ft)



# Boundary Setup



## External Headlands with Constant Offset

- Creates a headland boundary the same size around the entire field.
- Select Constant Offset
- Enter desired headland width.

## Exterior Headland

GreenStar 2 Pro - Mapping

**Boundaries**

Define or select an exterior boundary, interior boundaries, and headlands.

6 / 8

Exit Setup

9:58am

\*Type  
Exterior Headland

\*Headland Group  
Headland01

\*Creation Method  
Constant Offset

Headland Indicator

Headland Boundary (ft) 120.000

Client: john smith

Farm: home place

Field: west field

30.23 (ac) 5234 (ft)

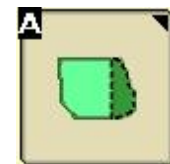
## Menu



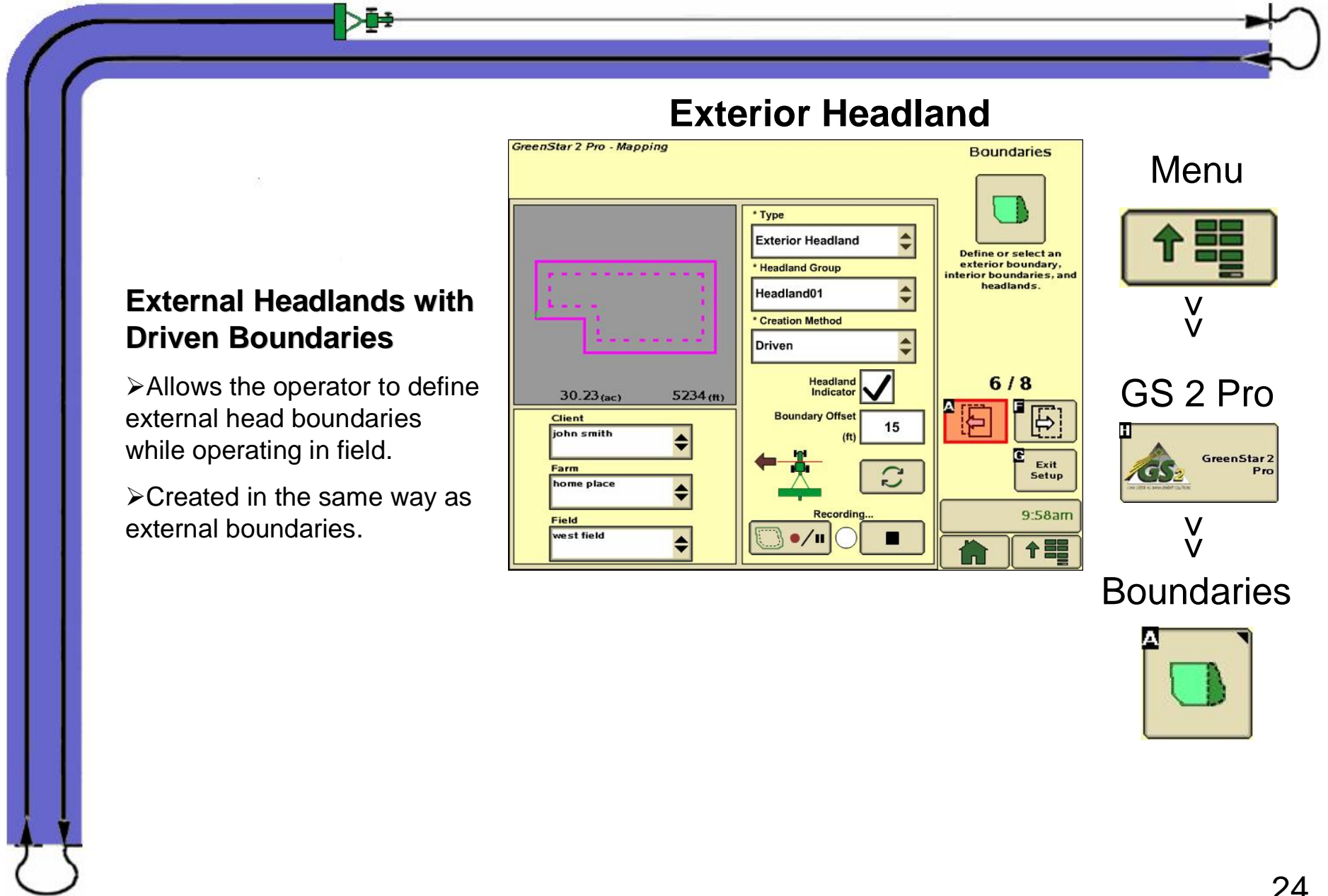
## GS 2 Pro



## Boundaries



# Boundary Setup



## External Headlands with Driven Boundaries

- Allows the operator to define external head boundaries while operating in field.
- Created in the same way as external boundaries.

## Exterior Headland

GreenStar 2 Pro - Mapping

**Boundaries**

Define or select an exterior boundary, interior boundaries, and headlands.

\* Type  
Exterior Headland

\* Headland Group  
Headland01

\* Creation Method  
Driven

Headland Indicator

Boundary Offset (ft) 15

Recording...

30.23 (ac) 5234 (ft)

Client: john smith

Farm: home place

Field: west field

6 / 8

Exit Setup

9:58am

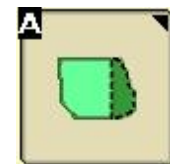
## Menu



## GS 2 Pro



## Boundaries



# Boundary Setup

## Interior Boundary

### To Define Interior Boundary

#### ➤ 2 options for Interior Boundary

- Use boundaries setup in Apex or have previously recorded

- Record new

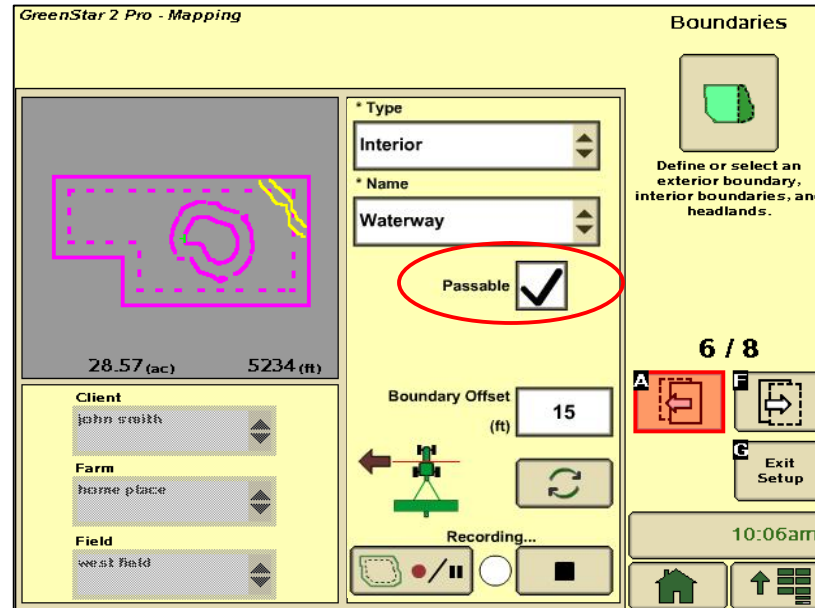
#### ➤ Determine **Passable** or **Impassable** Boundary

#### ➤ Passable

- Performs sequences only
- No Interior Headland

#### ➤ Impassable

- Require Interior Headlands
- Interior Headlands can be driven or created with an offset



\*If an impassable interior boundary is created, a interior headland is also required

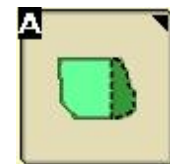
### Menu



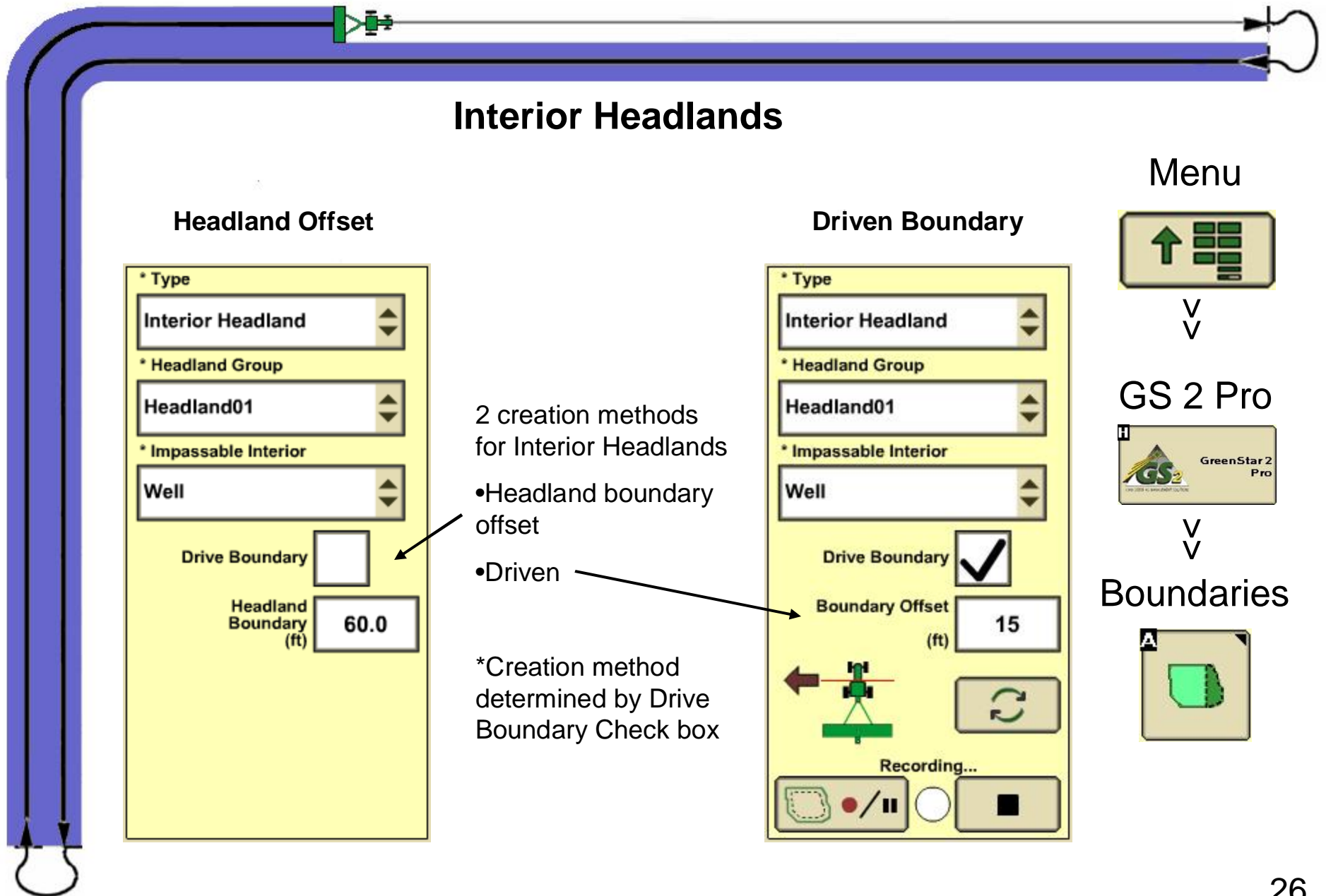
### GS 2 Pro



### Boundaries



# Boundary Setup



## Interior Headlands

### Headland Offset

\* Type  
Interior Headland

\* Headland Group  
Headland01

\* Impassable Interior  
Well

Drive Boundary

Headland Boundary (ft)

2 creation methods for Interior Headlands

- Headland boundary offset
- Driven

\* Creation method determined by Drive Boundary Check box

### Driven Boundary

\* Type  
Interior Headland

\* Headland Group  
Headland01

\* Impassable Interior  
Well

Drive Boundary

Boundary Offset (ft)

Recording...

## Menu



GS 2 Pro



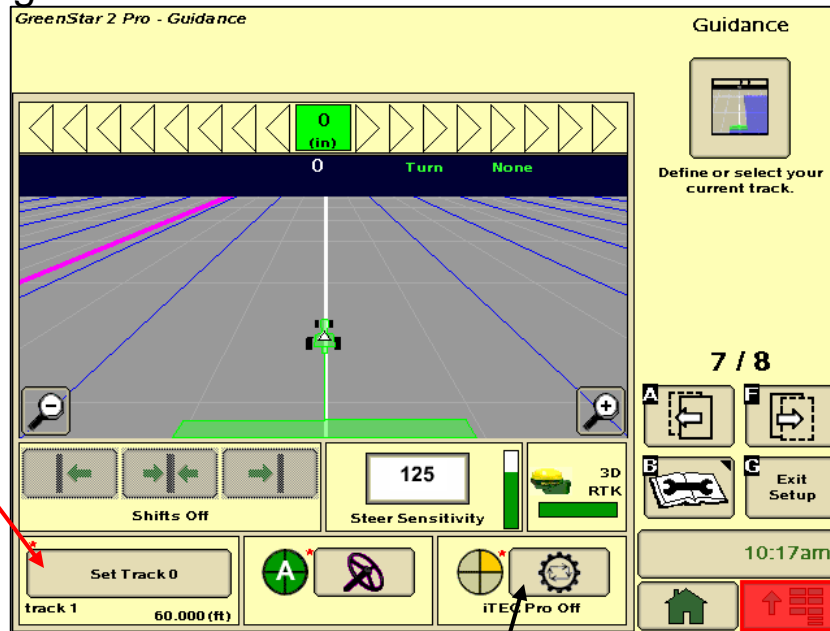
Boundaries



# Guidance Setup

7. This page allows for the setup of AutoTrac and the viewing of AutoTrac and iTEC Pro diagnostics.

This page allows to set guidance lines (Set Track 0) and other items necessary to operate AutoTrac.



## iTEC Pro Status Pie

1. iTEC Pro Off  
Installed – iTEC Pro compatible software installed on vehicle
2. iTEC Pro Off  
Configured – StarFire Signal, iTEC Pro setup requirements are complete
3. iTEC Pro On  
Enabled – iTEC Pro button is pressed, “On” is displayed
4. iTEC Pro On  
Active – Resume switch pressed

Select this button to view iTEC Pro diagnostics or Enable system if system is Configured (2 pieces of the pie).

## Menu



## GS 2 Pro



## Guidance



# iTEC Pro Setup

## iTEC Pro Diagnostic page

**Note;** Items with --- still need to be completed to gain that piece of the status pie.

GreenStar 2 Pro - Diagnostic Readings

View: iTEC Pro

Last Exit Code Issued: Vehicle Too Slow  
Time of Last Exit Code: 14: 15: 35 4/ 17/ 2008

State	Conditions	Status
	<b>Vehicle s/w installed</b>	
	iTEC Pro Ready	OK
	<b>Configured</b>	
	IMS Off	OK
	No Active iTEC Exit/Stop Codes	OK
	Field Boundary Defined	OK
	Headland Boundary Defined	OK
	Machine and Implement Defined	OK
	GPS status is SF1, SF2, or RTK	OK
	Defined Sequences valid	---
	Tracking Mode selected	OK
	Tracking path defined	OK

1/2

GreenStar 2 Pro - Diagnostic Readings

View: iTEC Pro

Last Exit Code Issued:  
Time of Last Exit Code:

State	Conditions	Status
	<b>Enabled</b>	
	Enabled button pressed	---
	<b>Active</b>	
	Machine not in Park	---
	Resume switch pressed	---
	Operator in seat	---
	Speed greater than 0.5 kph	---

2 / 2

To return to the setup tool

Menu



GS 2 Pro

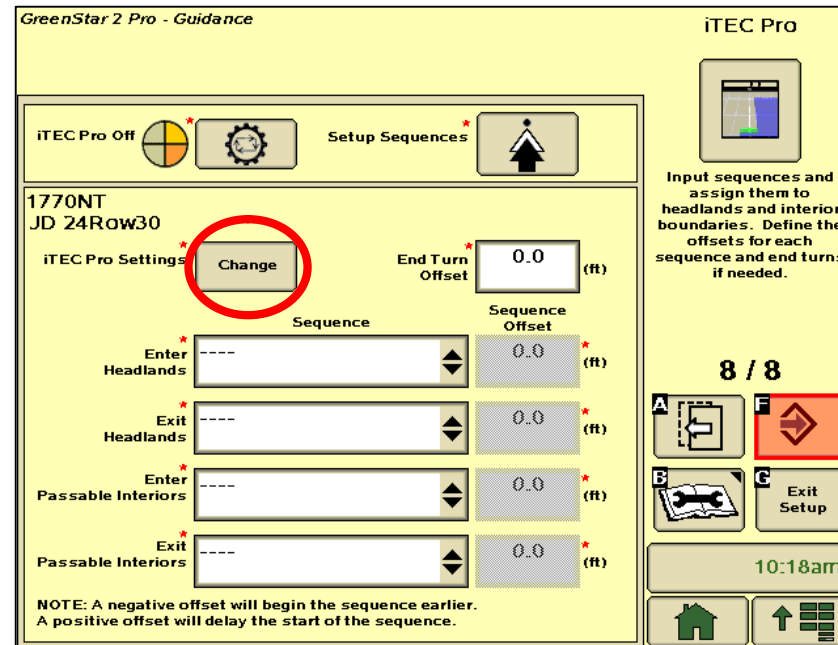


At this point in the Setup, only sequences are left to configure iTEC Pro.

# iTEC Pro Settings

8. The final page of the setup tool allows for turn settings to be selected. Also, sequences are created or modified on this page.

Navigate to the **iTEC Pro Settings** page to select the Turn Pattern, Implement Turn Radius, and Minimize Skips or Overlaps to determine how the equipment will enter and exit the exterior and interior headlands.



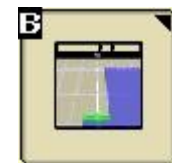
Menu



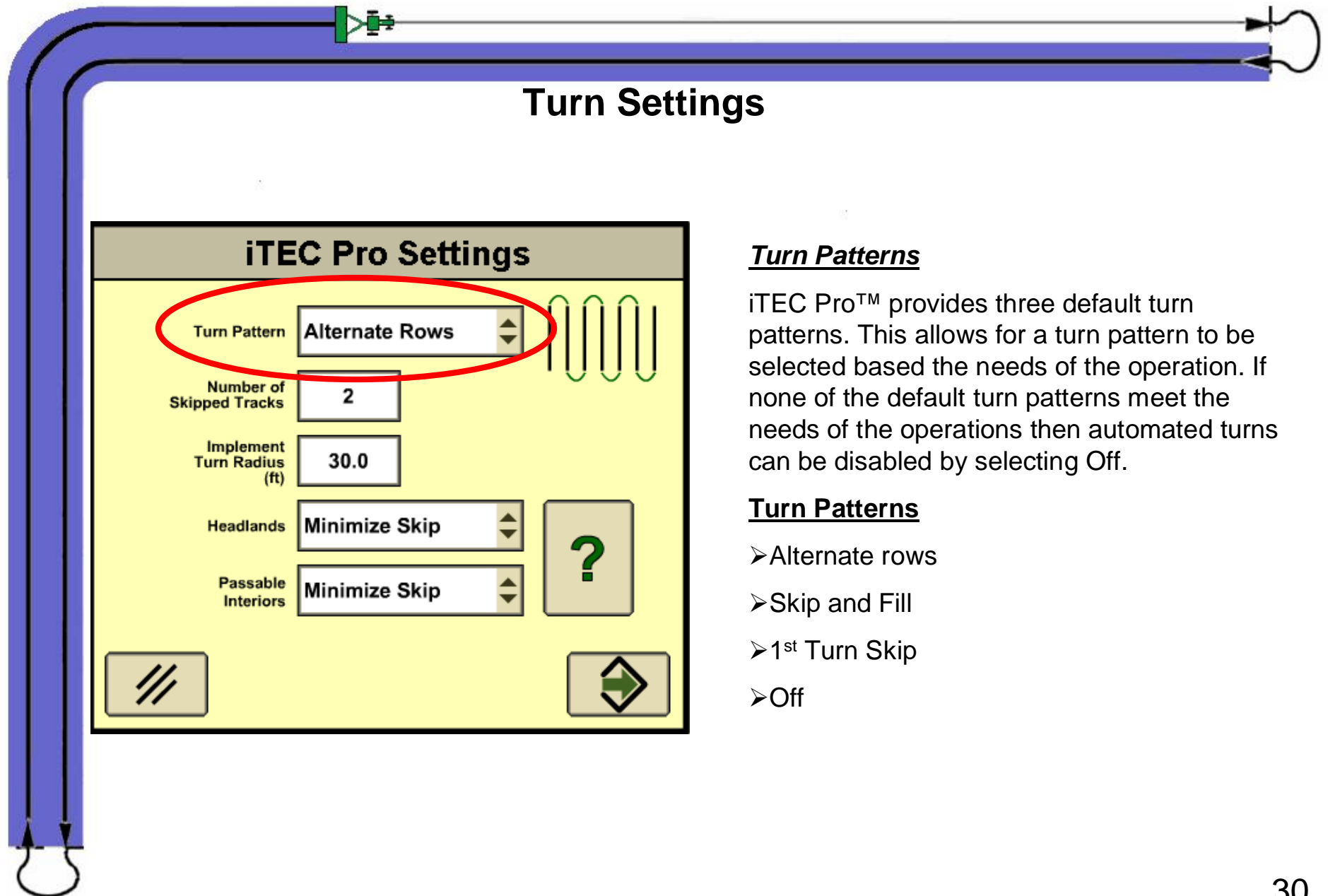
GS 2 Pro



iTEC Pro



# iTEC Pro Settings



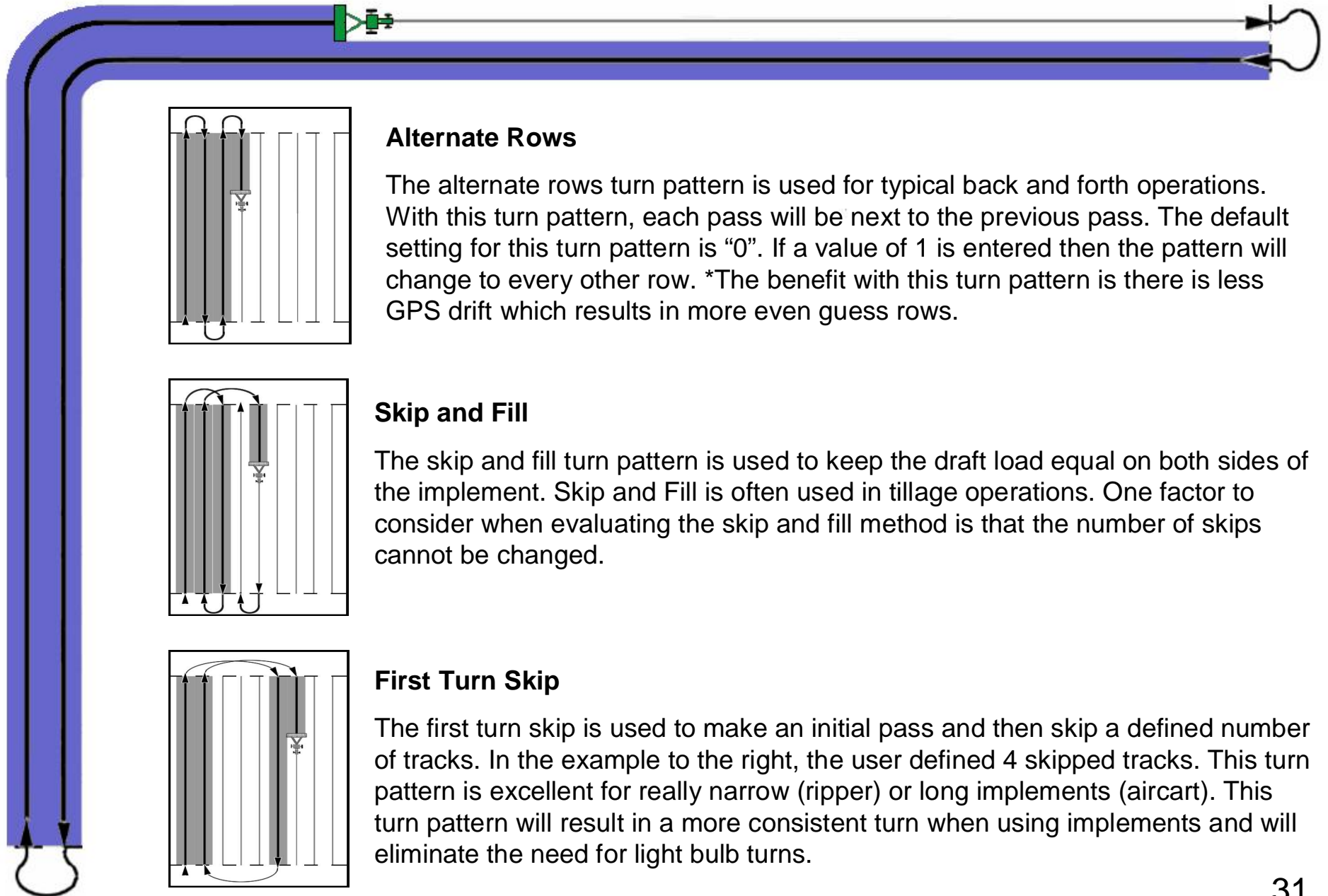
## Turn Patterns

iTEC Pro™ provides three default turn patterns. This allows for a turn pattern to be selected based the needs of the operation. If none of the default turn patterns meet the needs of the operations then automated turns can be disabled by selecting Off.

## Turn Patterns

- Alternate rows
- Skip and Fill
- 1<sup>st</sup> Turn Skip
- Off

# iTEC Pro Settings



## Alternate Rows

The alternate rows turn pattern is used for typical back and forth operations. With this turn pattern, each pass will be next to the previous pass. The default setting for this turn pattern is "0". If a value of 1 is entered then the pattern will change to every other row. \*The benefit with this turn pattern is there is less GPS drift which results in more even guess rows.

## Skip and Fill

The skip and fill turn pattern is used to keep the draft load equal on both sides of the implement. Skip and Fill is often used in tillage operations. One factor to consider when evaluating the skip and fill method is that the number of skips cannot be changed.

## First Turn Skip

The first turn skip is used to make an initial pass and then skip a defined number of tracks. In the example to the right, the user defined 4 skipped tracks. This turn pattern is excellent for really narrow (ripper) or long implements (aircart). This turn pattern will result in a more consistent turn when using implements and will eliminate the need for light bulb turns.

# iTEC Pro Settings

## Turn Settings

**iTEC Pro Settings**

Turn Pattern: Alternate Rows

Number of Skipped Tracks: 2

Implement Turn Radius (ft): 30.0

Headlands: Minimize Skip

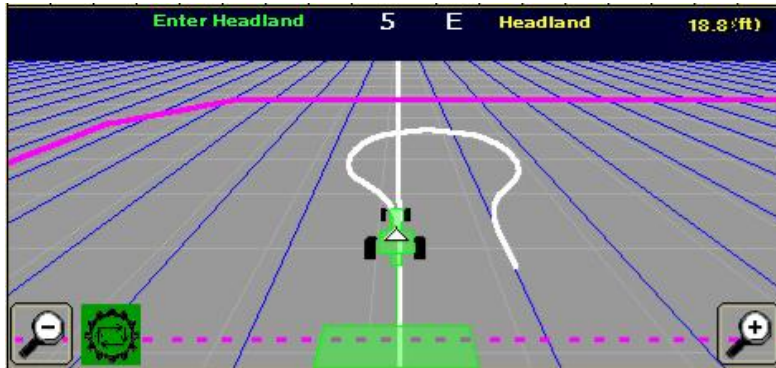
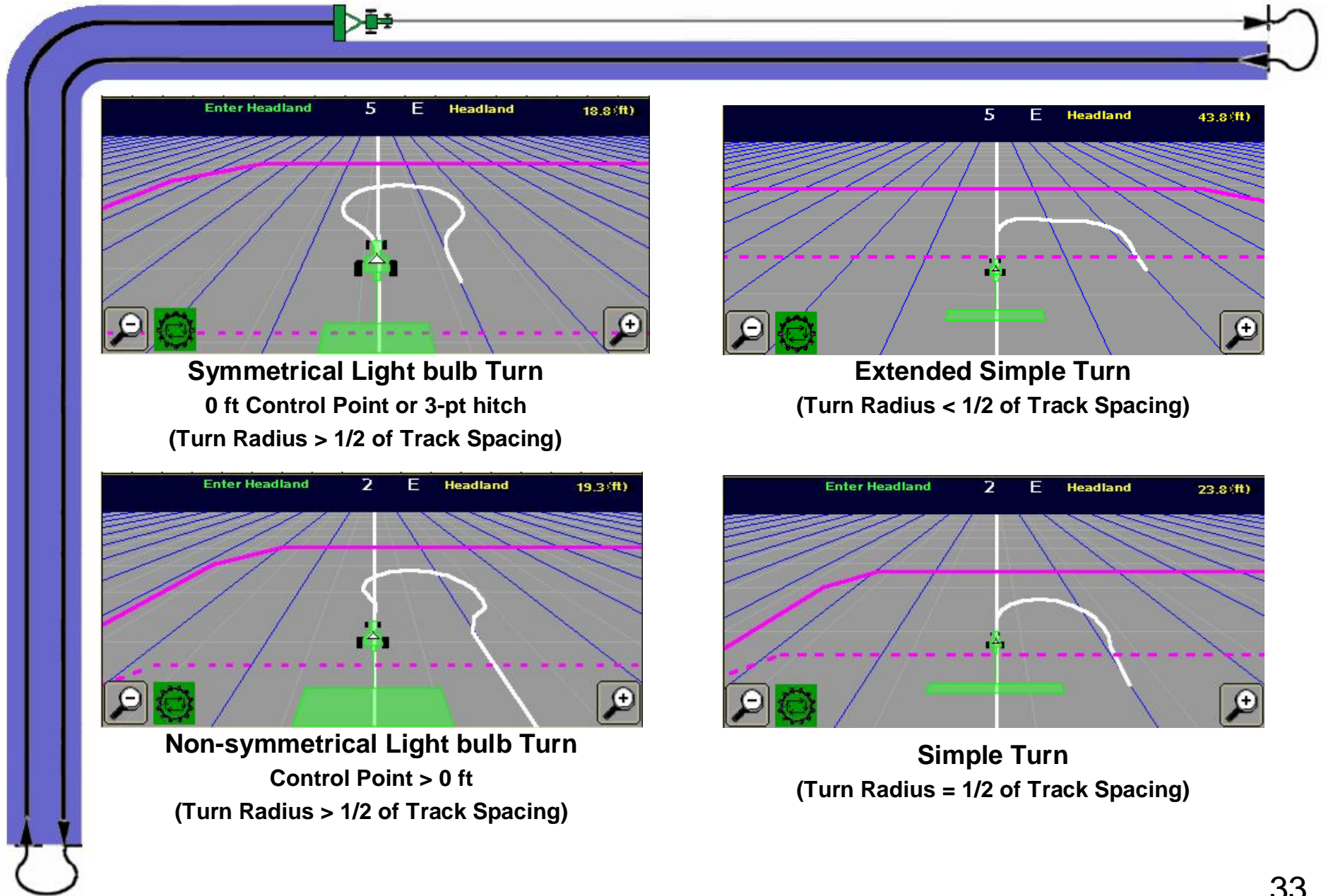
Passable Interiors: Minimize Skip

**Number of skipped tracks** is an available option for Alternate Rows and 1<sup>st</sup> Turn skip and allows entries of 0-10. Number of skipped track = 0 will follow track 0,1,2,3, etc. across the field.

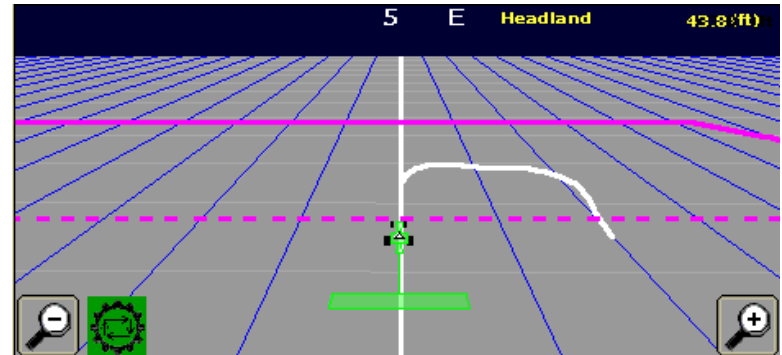
### Implement Turn Radius

- The distance given for the Implement Turn Radius tells iTEC Pro how tight of a turn a machine can make with an attached implement.
- The Turn Radius determines what **turn type** will be used at the end of a pass.
- iTEC Pro will compare the Machine Turn Radius and Implement Turn Radius and use the **larger** of the two.

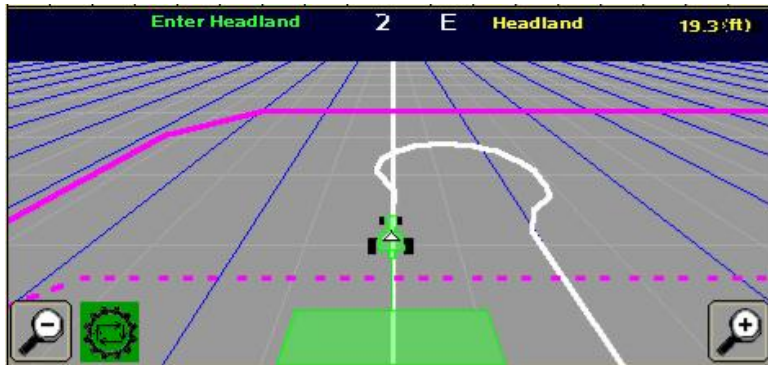
# Turn Types



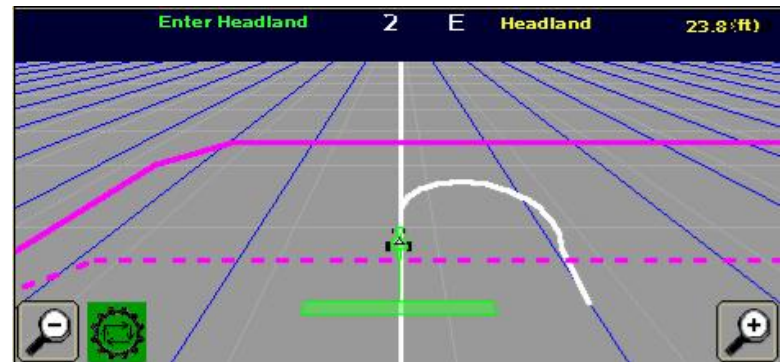
**Symmetrical Light bulb Turn**  
0 ft Control Point or 3-pt hitch  
(Turn Radius > 1/2 of Track Spacing)



**Extended Simple Turn**  
(Turn Radius < 1/2 of Track Spacing)

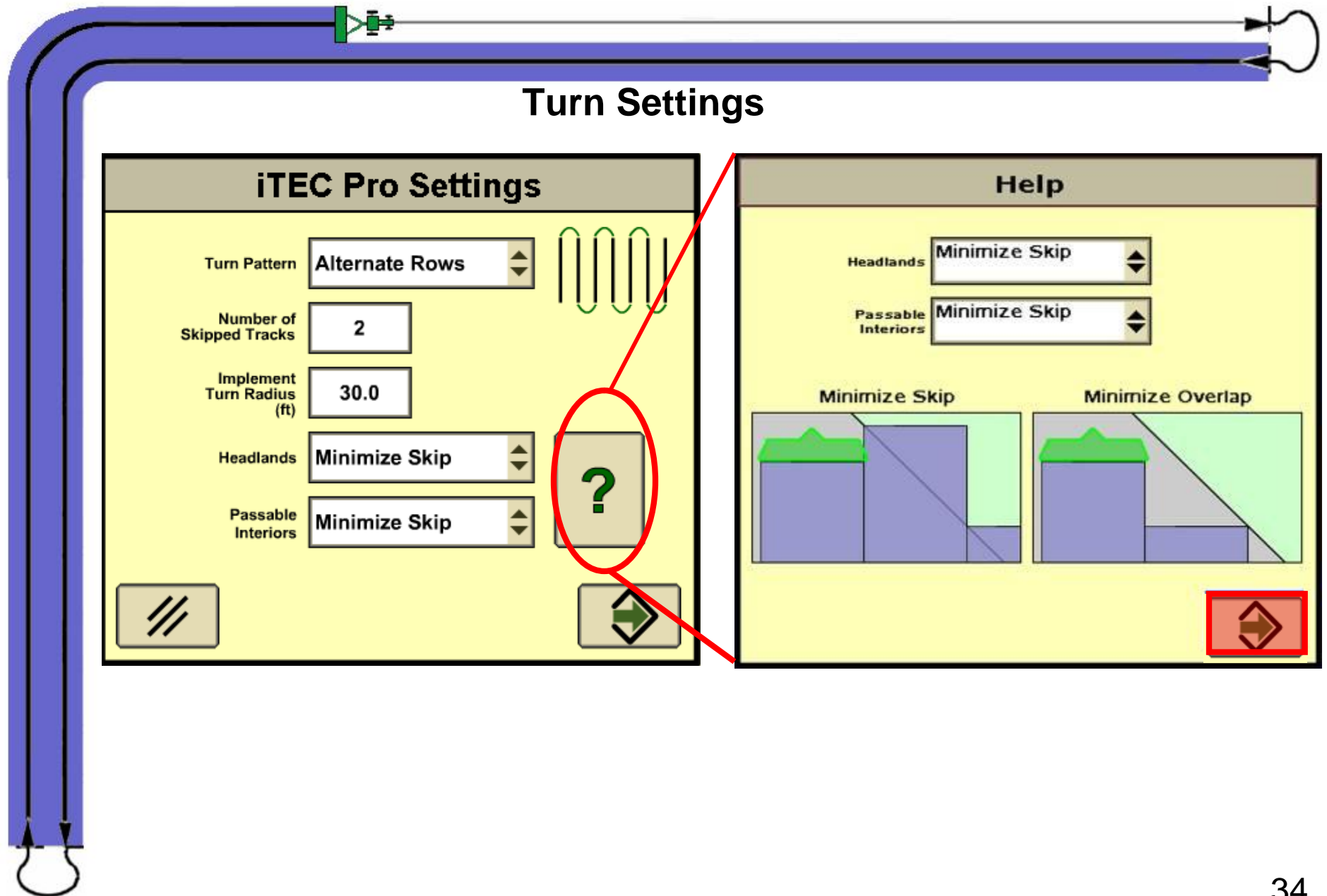


**Non-symmetrical Light bulb Turn**  
Control Point > 0 ft  
(Turn Radius > 1/2 of Track Spacing)

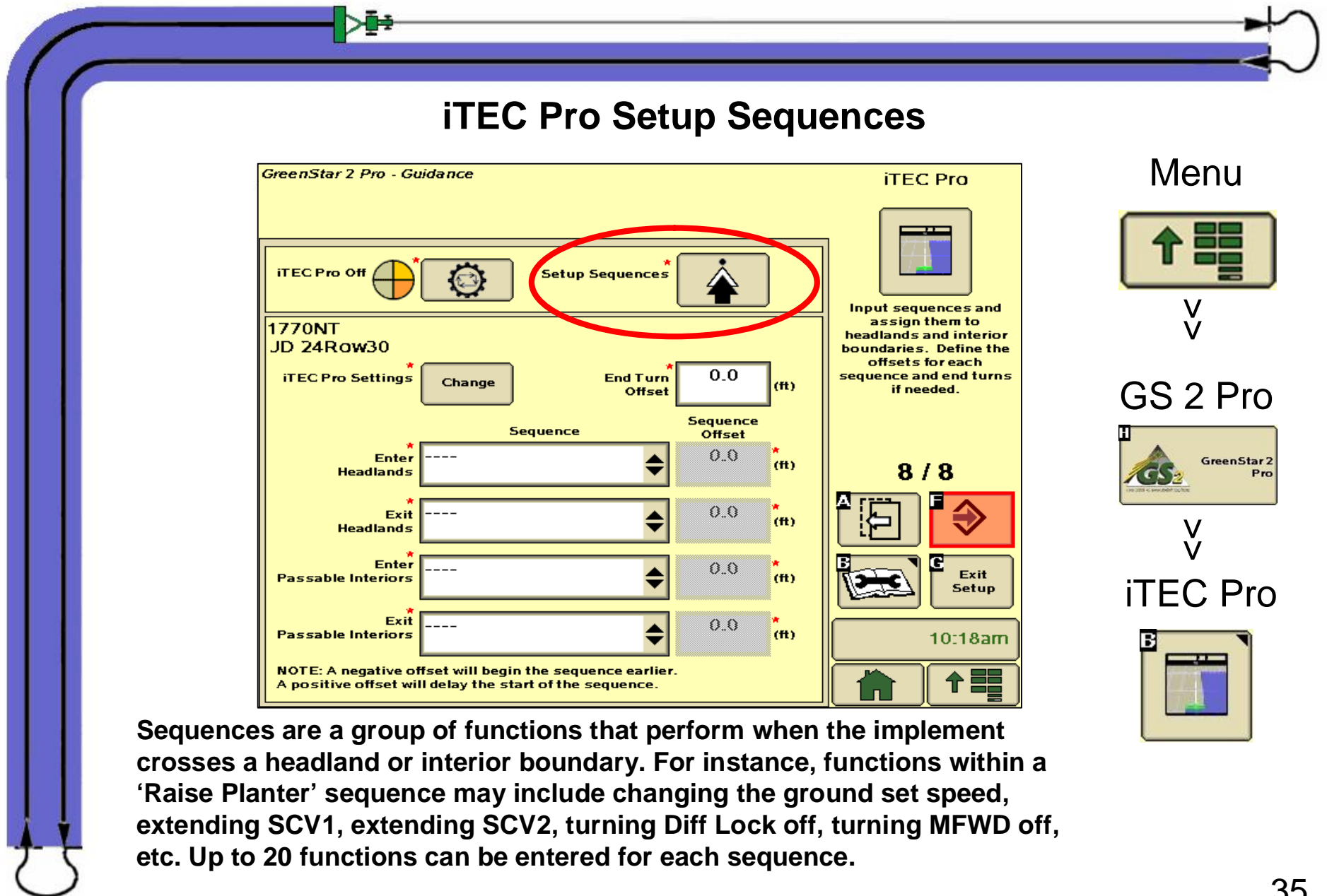


**Simple Turn**  
(Turn Radius = 1/2 of Track Spacing)

# iTEC Pro Settings



# Sequence Settings



## iTEC Pro Setup Sequences

GreenStar 2 Pro - Guidance

iTEC Pro

iTEC Pro Off **Setup Sequences**

1770NT  
JD 24Row30

iTEC Pro Settings End Turn Offset  (ft)

	Sequence	Sequence Offset
Enter Headlands	<input type="text" value=""/>	<input type="text" value="0.0"/> (ft)
Exit Headlands	<input type="text" value=""/>	<input type="text" value="0.0"/> (ft)
Enter Passable Interiors	<input type="text" value=""/>	<input type="text" value="0.0"/> (ft)
Exit Passable Interiors	<input type="text" value=""/>	<input type="text" value="0.0"/> (ft)

NOTE: A negative offset will begin the sequence earlier. A positive offset will delay the start of the sequence.

8 / 8

10:18am

### Menu



### GS 2 Pro



### iTEC Pro



Sequences are a group of functions that perform when the implement crosses a headland or interior boundary. For instance, functions within a 'Raise Planter' sequence may include changing the ground set speed, extending SCV1, extending SCV2, turning Diff Lock off, turning MFWD off, etc. Up to 20 functions can be entered for each sequence.

# Sequence Settings

Creating different sequences for each implement and/or boundary can be useful.

**Setup Sequences**

Sequence: **raise planter**

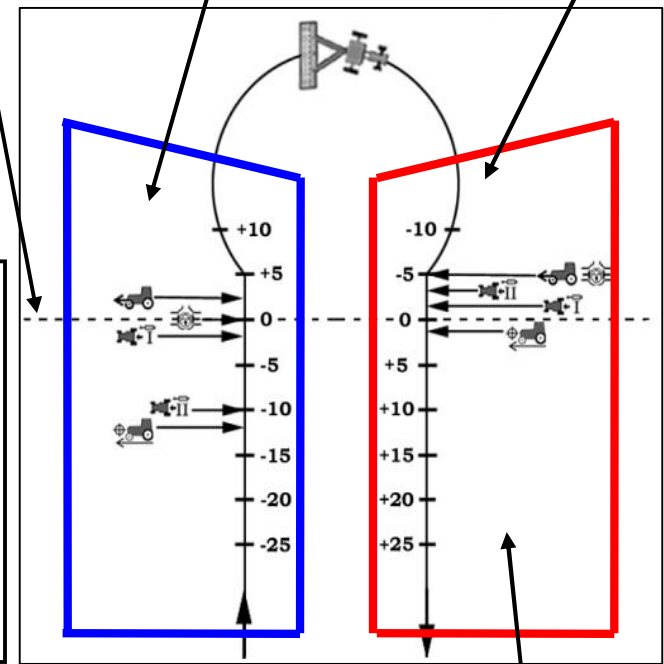
1		3.5 (mi/h)	-12.0 (ft)
2		Retract	-10.0 (ft)
3		Extend	-2.0 (ft)
4		Off	0.0 (ft)
5		Off	3.0 (ft)

1/2

## Sequence Naming Examples

- R Planter Headlands
- L Planter Headlands
- Raise Disk Waterway
- Lower Disk Waterway
- Raise 2510
- Lower 2510

Headland Boundary      End of Raise Planter Sequence      Start of Lower Planter Sequence



Raise Planter Sequence

Lower Planter Sequence

**Note:** Each sequence must contain between 1 and 20 functions.

# Sequence Settings

Sequences can be created by selecting from the drop down boxes or recording a manually completed sequence. Both recorded and created sequences be edited in the sequence list box.

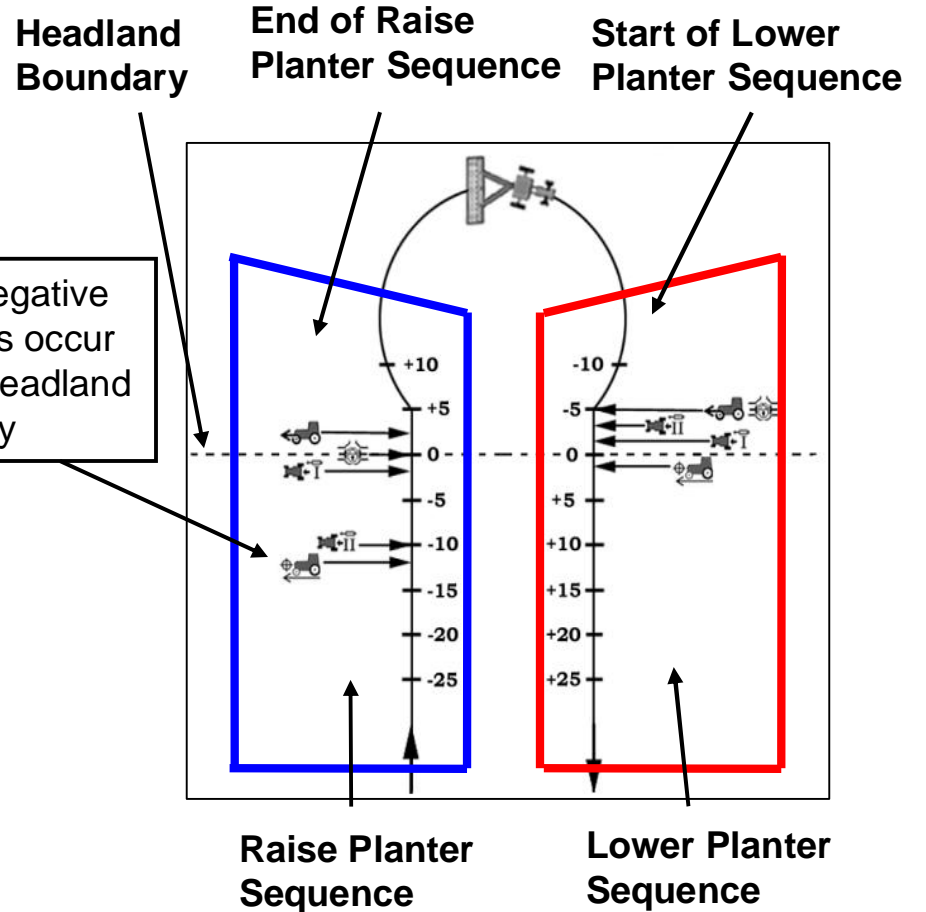
**Setup Sequences**

Sequence: **raise planter**

1		3.5 (mi/h)	-12.0 (ft)
2		Retract	-10.0 (ft)
3		Extend	-2.0 (ft)
4		Off	0.0 (ft)
5		Off	3.0 (ft)

1/2










**Note:** Negative distances occur before Headland Boundary



## Tips and tricks

- All functions must occur within 100 ft (closer to the boundary, higher the accuracy)
- If using a PST, either Set Speed or Set Gear can be used, not both.
- Must press **Accept** to save.

# Sequence Function Icons

Function Icon	Function Name	Function Description
	Differential Lock	Engages/disengages the differential lock function
	MFWD	Engages/disengages mechanical front wheel drive functionality
	PTO	Engages/disengages the Power Take Off shaft
	Set Ground Speed	Sets the ground speed for the machine
	Ground Speed Gear	Engages the gear that most closely matches the ground speed chosen at the current throttle position. This function is only used with tractors with PowerShift transmissions.
	Hitch Position	Raises or lowers the hitch
	APS Resume	Engages the Automatic PowerShift function
	SCV I-V	Cancels, retracts, extends, or floats the implement connected to the SCV I-V
	AccuDepth SCV I-V	Cancels, retracts, extends, or floats the implement connected to the AccuDepth SCV I-V

# Sequence Settings

## Sequence Association

**Associate Sequences to boundaries:** On this page, sequences are associated to boundaries. This allows for different sequences to occur when entering/exiting headlands and entering/exiting passable interior boundaries.

**End Turn Offset**

The End Turn Offset value can be changed to adjust where the beginning of the turn occurs.

**Sequence Offset**

Used if the functions happen at the correct time within the sequence, but the entire sequence needs to happen sooner or later than originally setup.

GreenStar 2 Pro - Guidance

iTEC Pro

iTEC Pro Off Setup Sequences

1770NT  
JD 24Row30

iTEC Pro Settings **End Turn Offset** 0.0 (ft)

	Sequence	Sequence Offset
Enter Headlands	raise planter	0.0 (ft)
Exit Headlands	lower planter	0.0 (ft)
Enter Passable Interiors	raise planter	0.0 (ft)
Exit Passable Interiors	lower planter	0.0 (ft)

NOTE: A negative offset will begin the sequence earlier.  
A positive offset will delay the start of the sequence.

8 / 8

10:24am

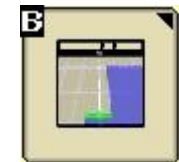
Menu



GS 2 Pro

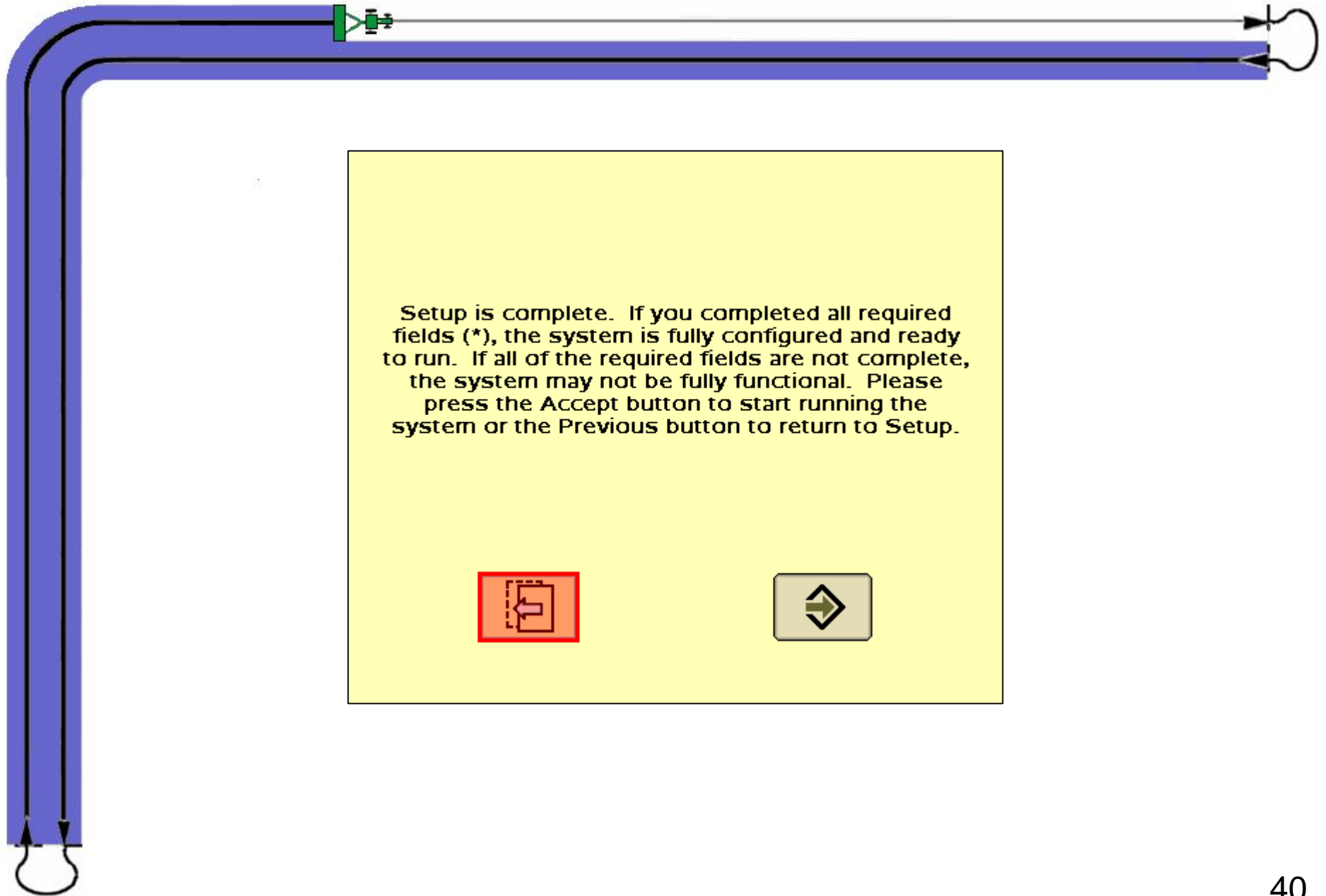


iTEC Pro



**Note:** Smaller offset distances cause the sequence or turn to occur closer to the boundary

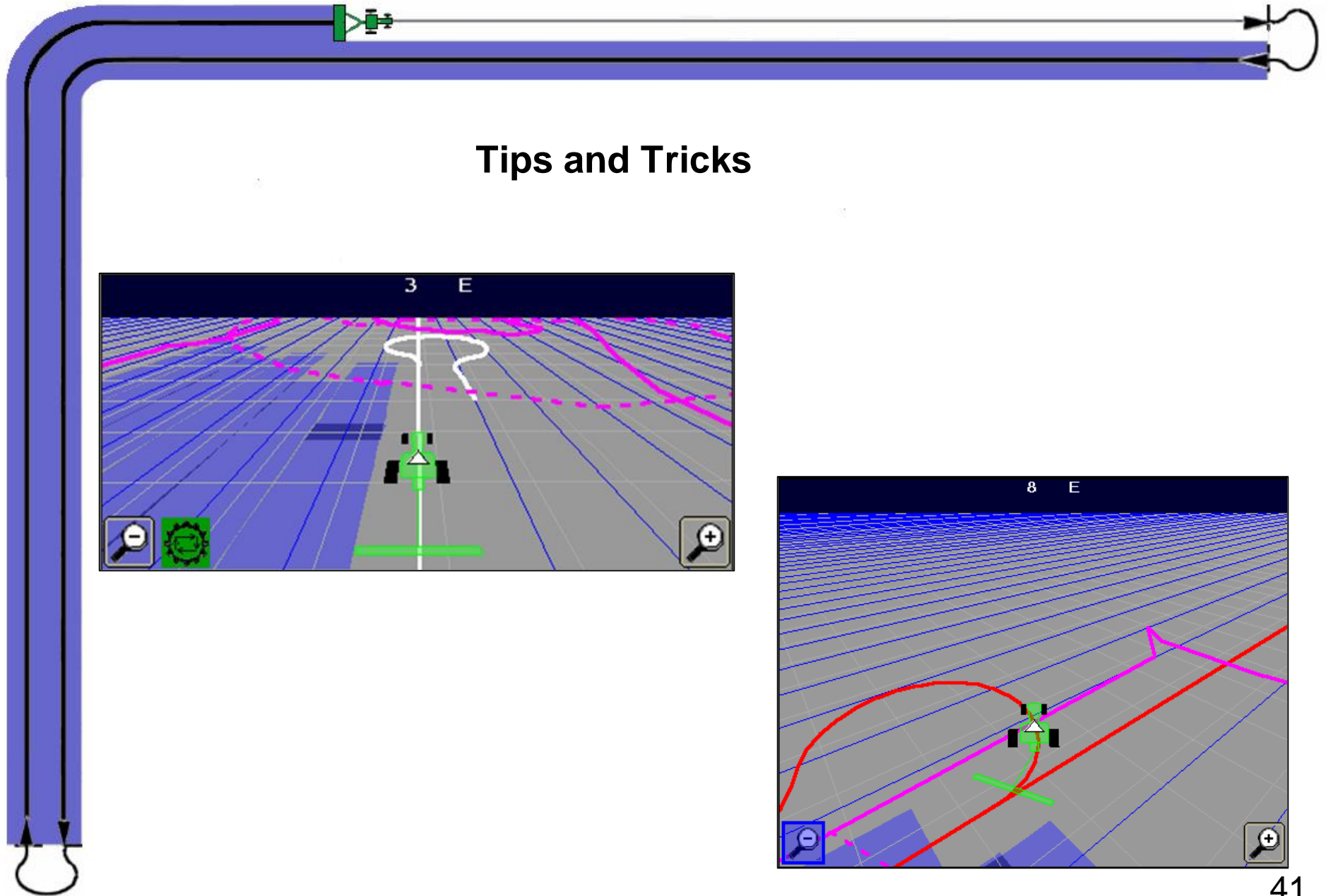
# iTEC Pro Setup



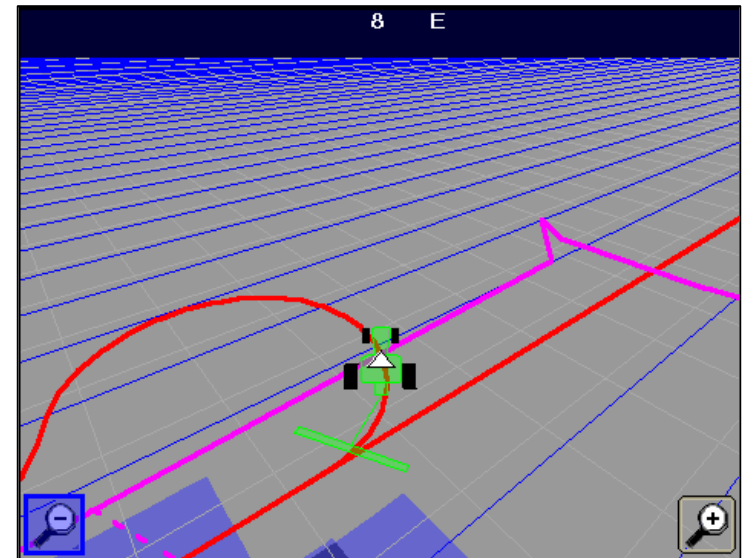
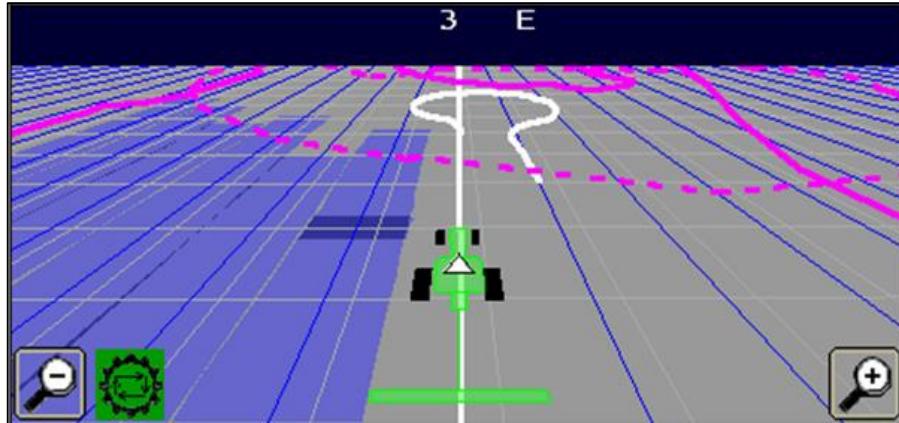
Setup is complete. If you completed all required fields (\*), the system is fully configured and ready to run. If all of the required fields are not complete, the system may not be fully functional. Please press the Accept button to start running the system or the Previous button to return to Setup.



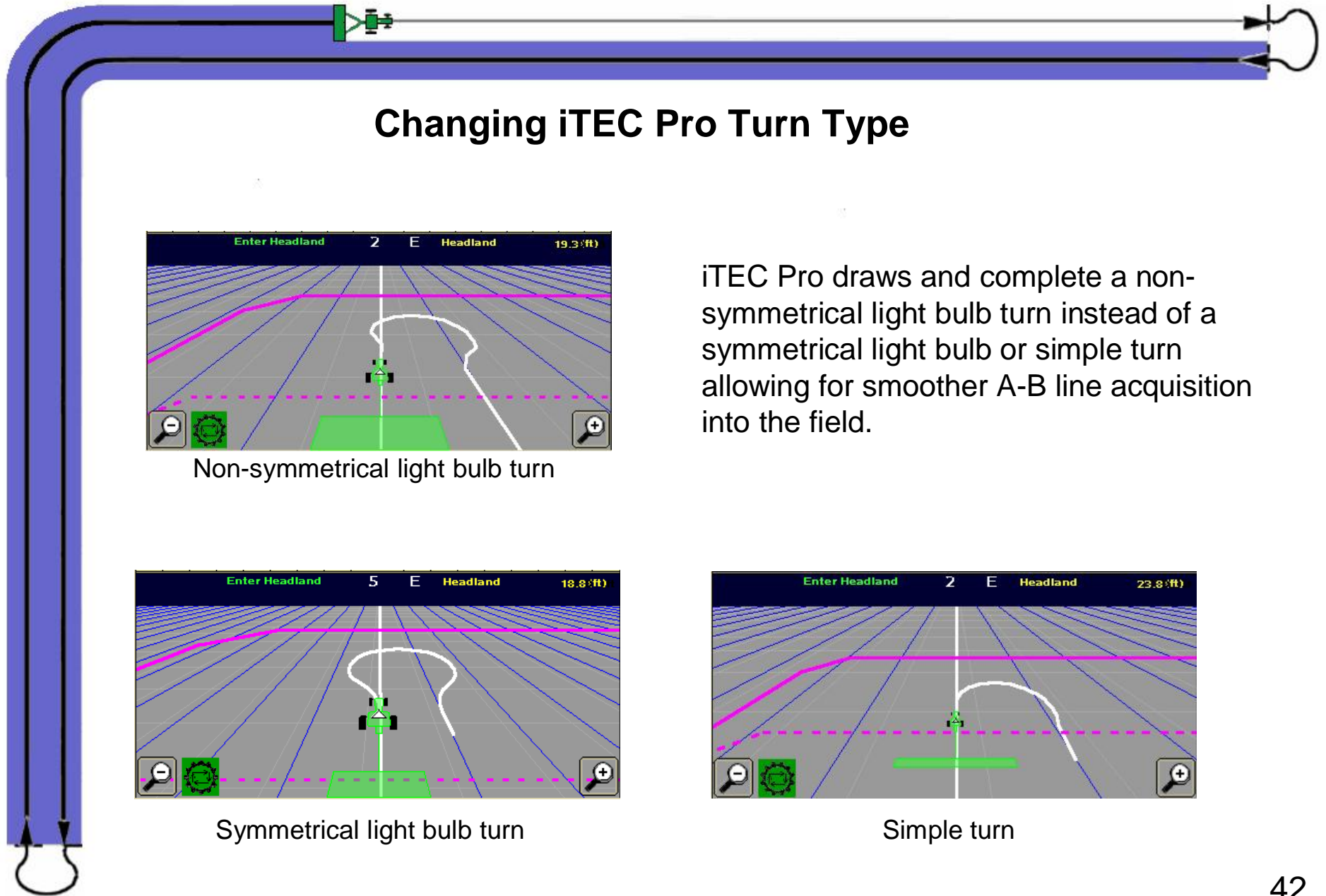
# iTEC Pro Best Practices



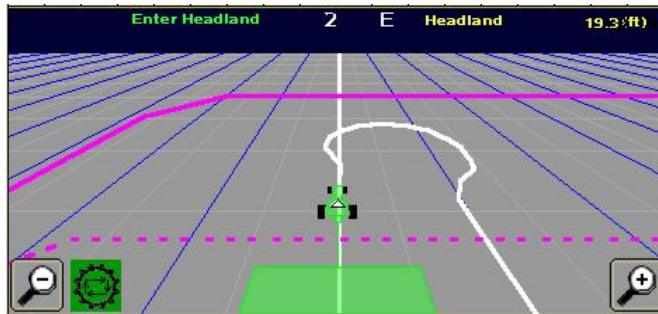
## Tips and Tricks



# iTEC Pro Best Practices

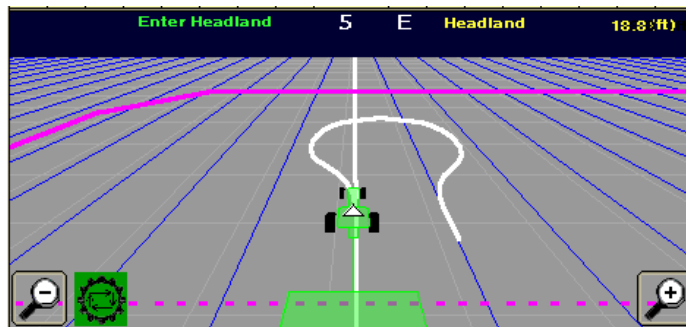


## Changing iTEC Pro Turn Type

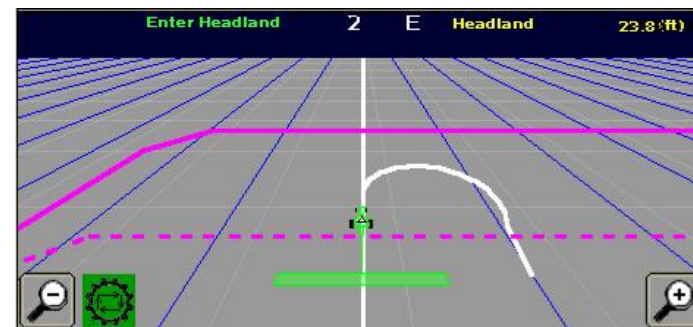


Non-symmetrical light bulb turn

iTEC Pro draws and complete a non-symmetrical light bulb turn instead of a symmetrical light bulb or simple turn allowing for smoother A-B line acquisition into the field.



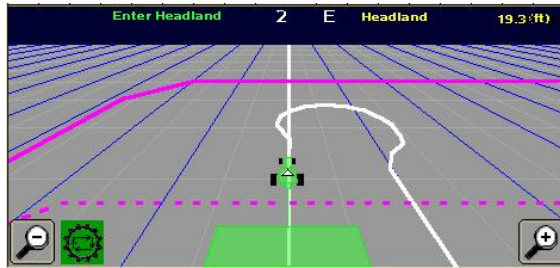
Symmetrical light bulb turn



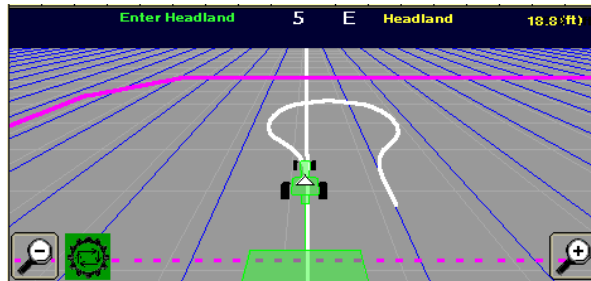
Simple turn

# iTEC Pro Best Practices

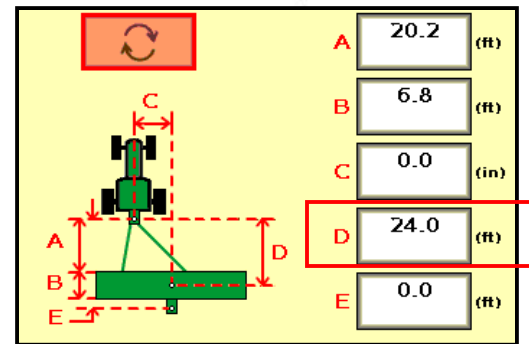
## iTEC Pro Turn Types Non-symmetrical to Symmetrical light bulb turns



Non-symmetrical light bulb turn



Symmetrical light bulb turn



➤ Reducing the connection to control point (D) will generate more symmetrical light bulb turns

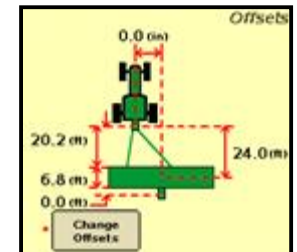
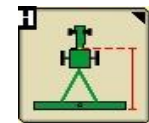
Menu



GS 2 Pro

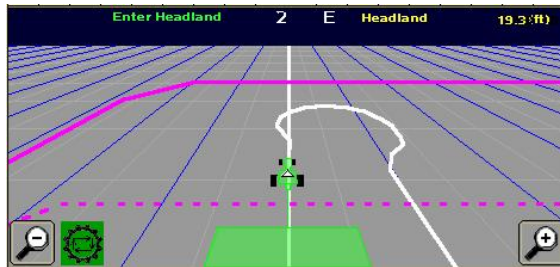


Implement

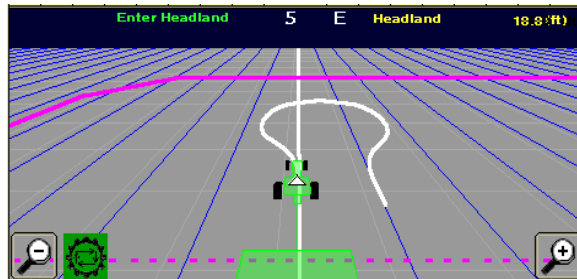


# iTEC Pro Best Practices

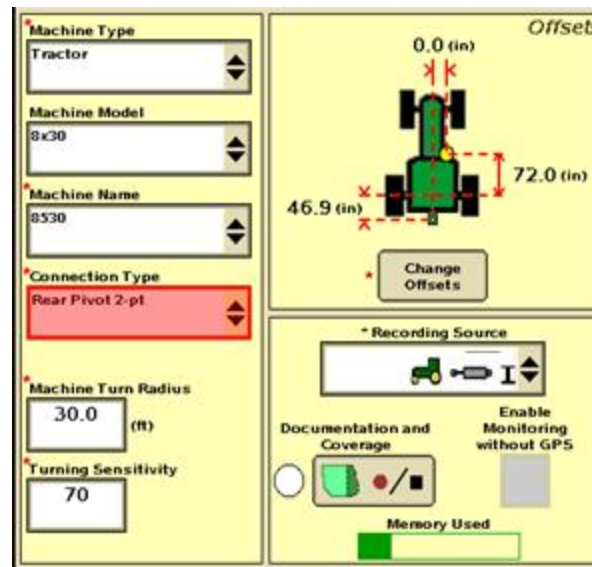
## iTEC Pro Turn Types Non-symmetrical to Symmetrical light bulb turns



Non-symmetrical light bulb turn



Symmetrical light bulb turn



➤ Setting the connection type to **Rear Rigid 3-pt** will also generate symmetrical light bulb turns

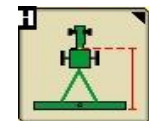
Menu



GS 2 Pro

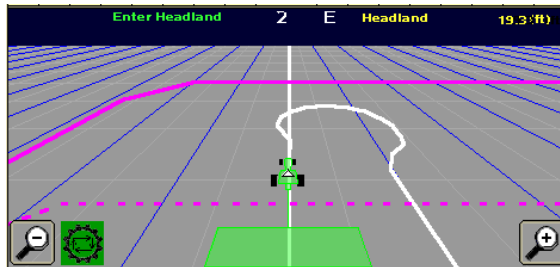


Machine

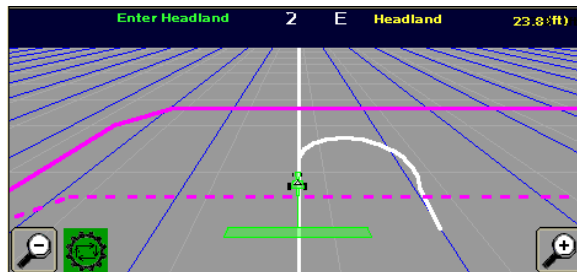


# iTEC Pro Best Practices

## iTEC Pro Turn Types Changing Light bulb turns to Simple Turns

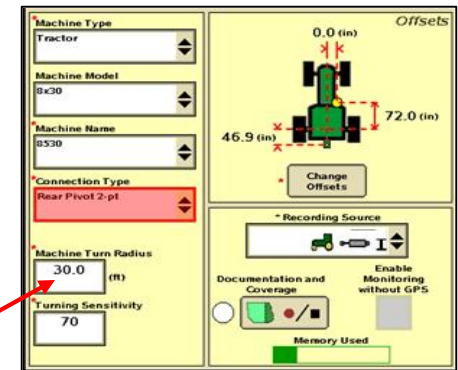


Non-symmetrical light bulb turn

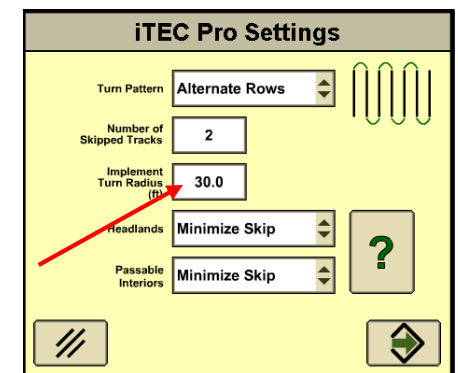


Simple turn

➤ If possible, reducing the turning radius of the tractor and implement to  $\frac{1}{2}$  of the track width will generate Simple Turns instead of light bulb turns.



Ex. With implement width and track spacing of 60 ft (24R30" planter), a turn radius of max 30 ft for tractor and implement will generate Simple Turns.

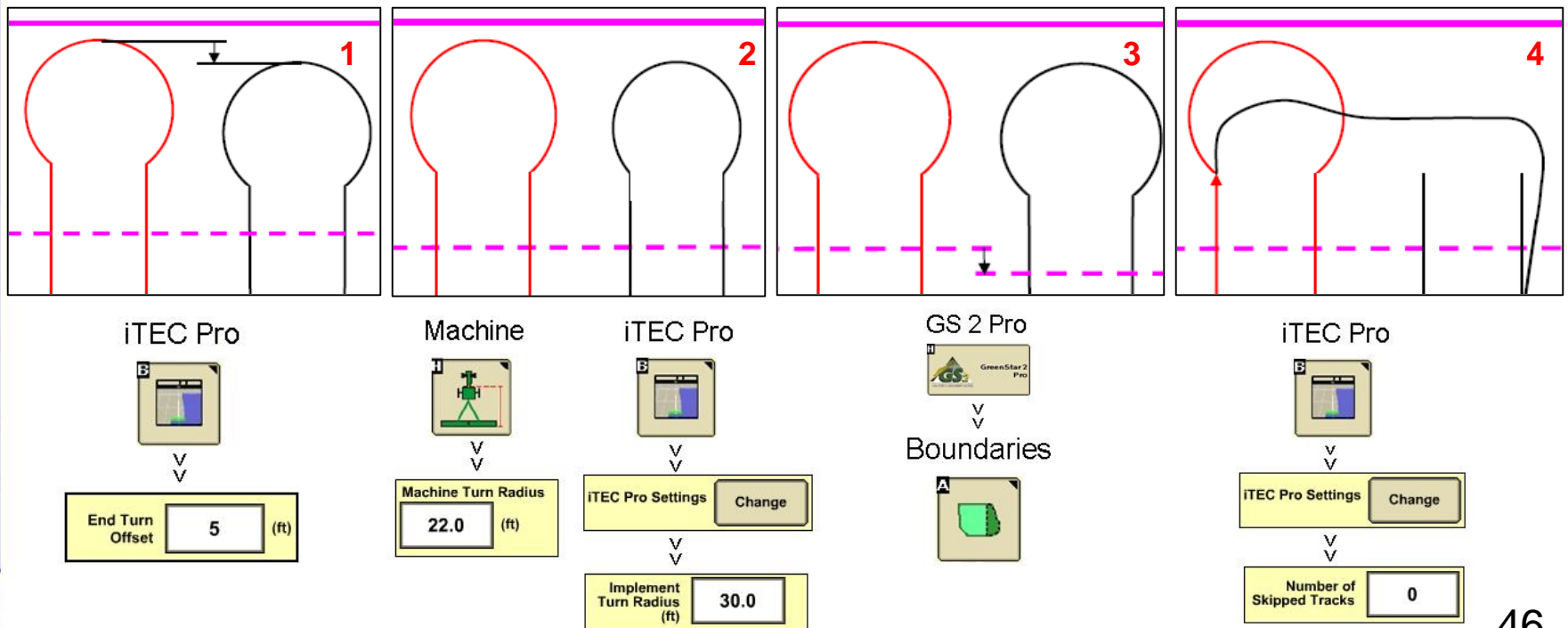
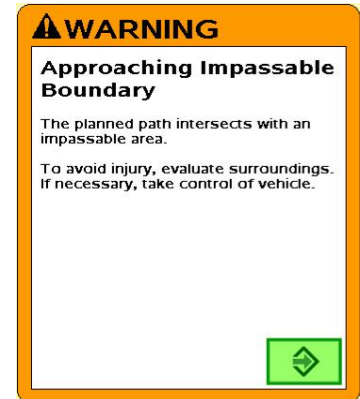


\*iTEC Pro will compare the Machine Turn Radius and Implement Turn Radius and use the larger of the two.

# iTEC Pro Best Practices

## Impassable Boundary warning appears at every turn

- Decrease End Turn Offset (figure 1)
- Decrease Turn Radius (figure 2)
- Increase headland size (figure 3)
- Skip tracks to create a “simple” or “extended” turn (figure 4)



# iTEC Pro Best Practices

## Wide and Narrow Guess Rows

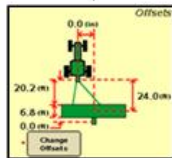
To adjust Connection to Control Point



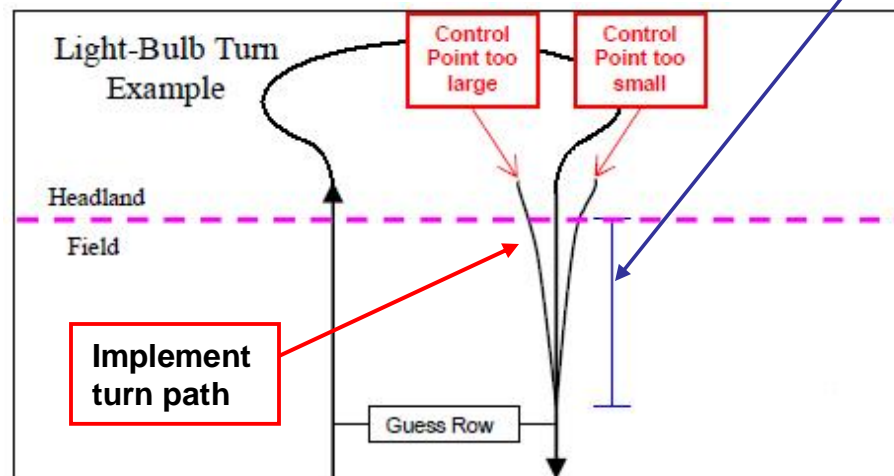
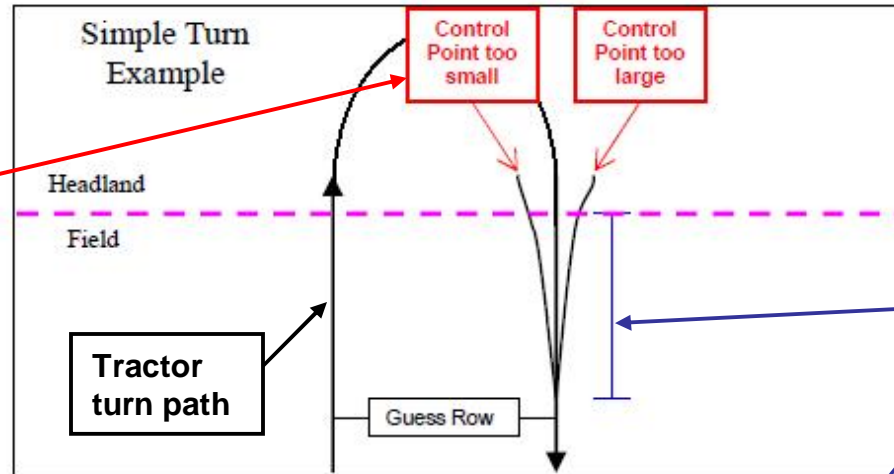
GS 2 Pro



Machine

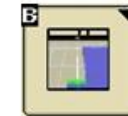


A	20.2	(m)
B	6.8	(m)
C	0.0	(m)
D	24.0	(m)
E	0.0	(m)



After adjusting the connection to control point, adding this distance to the End Turn Offset will also help eliminate wide and narrow guess rows.

Guidance



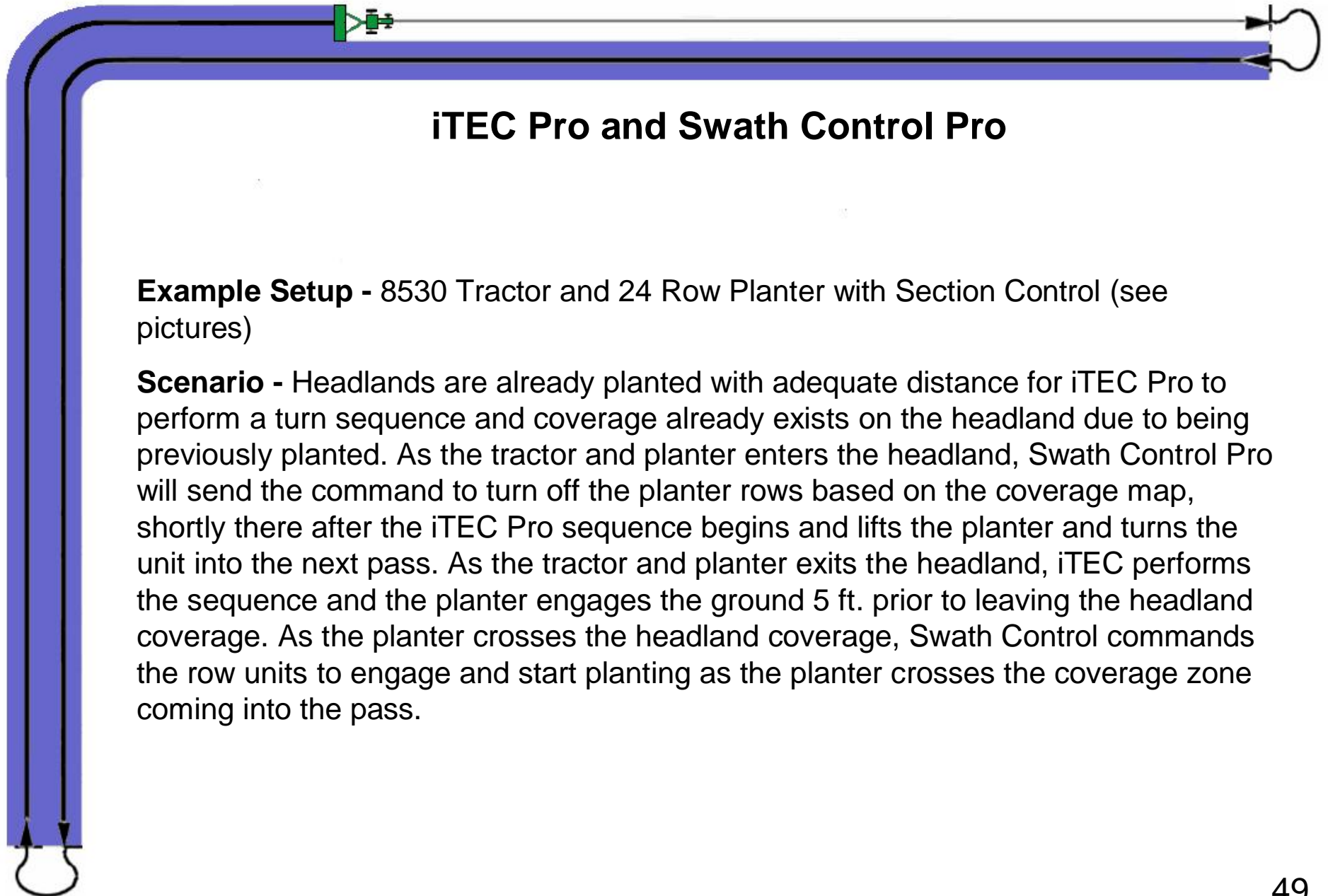
End Turn Offset  (ft)

# iTEC Pro Best Practices

## iTEC Pro and Swath Control Pro

- Tip # 1.** First setup Swath Control for the vehicle and implement you are operating. Swath control has split second reaction times based on hydraulic or electrical system reactions and will provide the best solution for controlling product flow and machine functions.
- Tip # 2.** Once Swath Control is accurately set, program the sequence for iTEC Pro to take place shortly after Swath Control has initiated an implement command when entering the headland. When exiting the headland, setup iTEC Pro so that the implement is lowered into the working state prior to leaving the coverage area. This will ensure that Swath Control can react at the exact times necessary and the implement is already in its field working position.
- Tip # 3.** Select Minimize Skips in iTEC Pro Settings Page to ensure that the entire implement has crossed into the headland or passable interior boundary before initiating sequences.
- Tip # 4.** A Starfire iTC receiver operating with SF2 or RTK level corrections is highly recommended to maximize precise machine control.

# iTEC Pro Best Practices



## iTEC Pro and Swath Control Pro

**Example Setup** - 8530 Tractor and 24 Row Planter with Section Control (see pictures)

**Scenario** - Headlands are already planted with adequate distance for iTEC Pro to perform a turn sequence and coverage already exists on the headland due to being previously planted. As the tractor and planter enters the headland, Swath Control Pro will send the command to turn off the planter rows based on the coverage map, shortly there after the iTEC Pro sequence begins and lifts the planter and turns the unit into the next pass. As the tractor and planter exits the headland, iTEC performs the sequence and the planter engages the ground 5 ft. prior to leaving the headland coverage. As the planter crosses the headland coverage, Swath Control commands the row units to engage and start planting as the planter crosses the coverage zone coming into the pass.

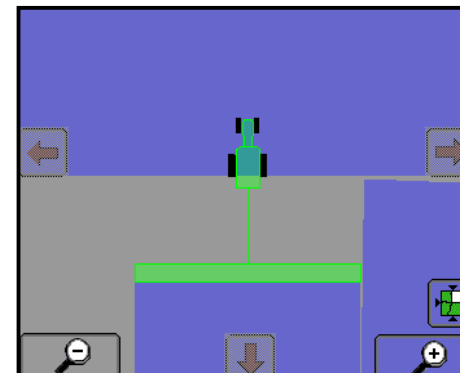
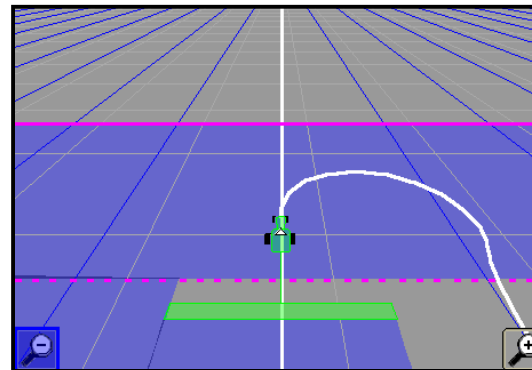
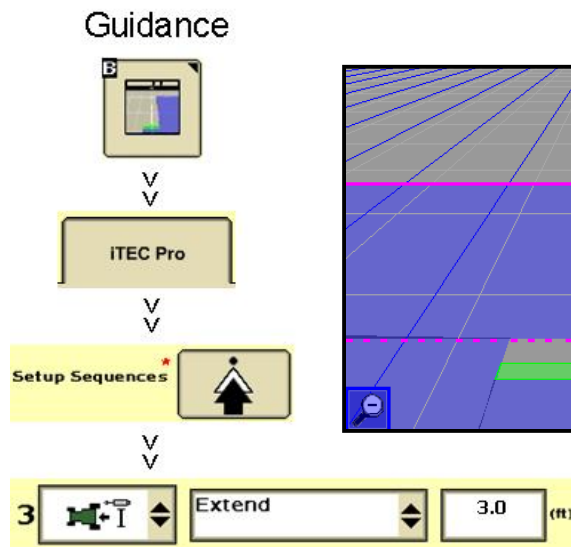
# iTEC Pro Best Practices

## iTEC Pro and Swath Control Pro

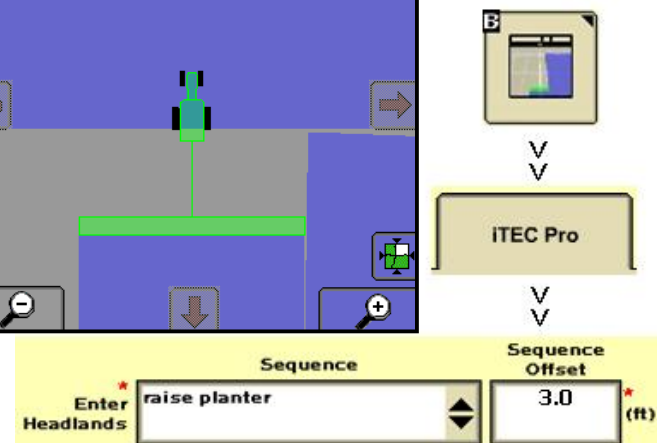
### Entering the headland

The planter should remain in the down/working position until it completely crosses into the blue headland coverage area. This will ensure that Swath Control is able to react correctly and turn off the row units of the planter in this example before the planter is raised.

This can be done on the Sequence Setup page by placing a more positive distance in the planter lift function or by entering a Sequence offset. This will cause the function or entire sequence to occur further in the headland.



Guidance



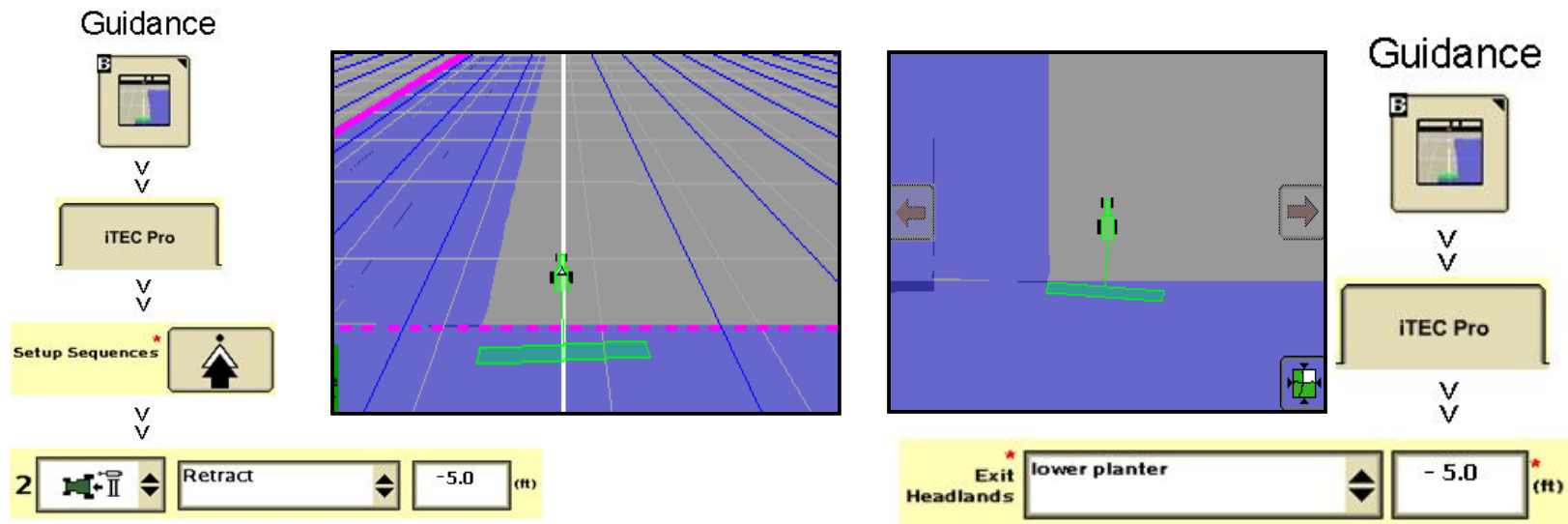
# iTEC Pro Best Practices

## iTEC Pro and Swath Control Pro

### Exiting the headland

Ensure the planter is fully lowered/in the working position prior to leaving the headland coverage zone. This will ensure that Swath Control Pro will be able to correctly and accurately manage the engagement of the seed meter clutches to begin seeding as the planter crosses the coverage zone.

This can be done on the Sequence Setup page by placing a more negative distance in the planter lower function or by decreasing the Sequence offset. This will cause the function or entire sequence to occur further in the headland.



# iTEC Pro Best Practices

## Headland raise/lower sequences are 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

Step	Icon	Speed (mi/h)	Distance (ft)
1	Tractor	4.0	-35.0
2	Tractor	2.0	-10.0
3	Implement	Extend	0.0
4	Tractor	4.0	10.0
5	Green dashed line		

Step	Icon	Speed (mi/h)	Distance (ft)
1	Tractor	2.0	-10.0
2	Implement	Retract	-5.0
3	Tractor	4.0	10.0
4	Tractor	6.0	30.0
5	Green dashed line		

Example sequence shown slows from field speed 35 ft before headland, slows to 2 mph to execute lift sequence, and then speeds back up to 4 mph for the turn. The exit headland sequence starts by slowing back to 2 mph to lower implement, and then stair steps back to field speed.

**\*Note** – When using the Record Sequence option, only one speed change is stored per sequence. If multiple speed changes are desired, sequences can be manually edited or created to include more than one speed change.

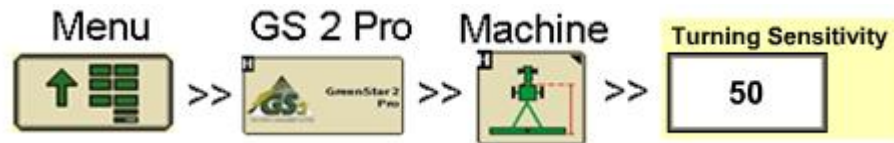
# iTEC Pro Best Practices

## Smoother Headland Turns

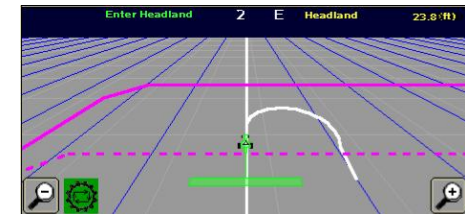
**Complaint-** Turn path is too “jerky” while exiting headland and acquiring AB line

### Tips-

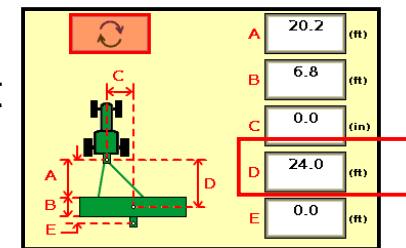
- Reduce Turn Sensitivity to lowest level that will maintain turn path (min 50)



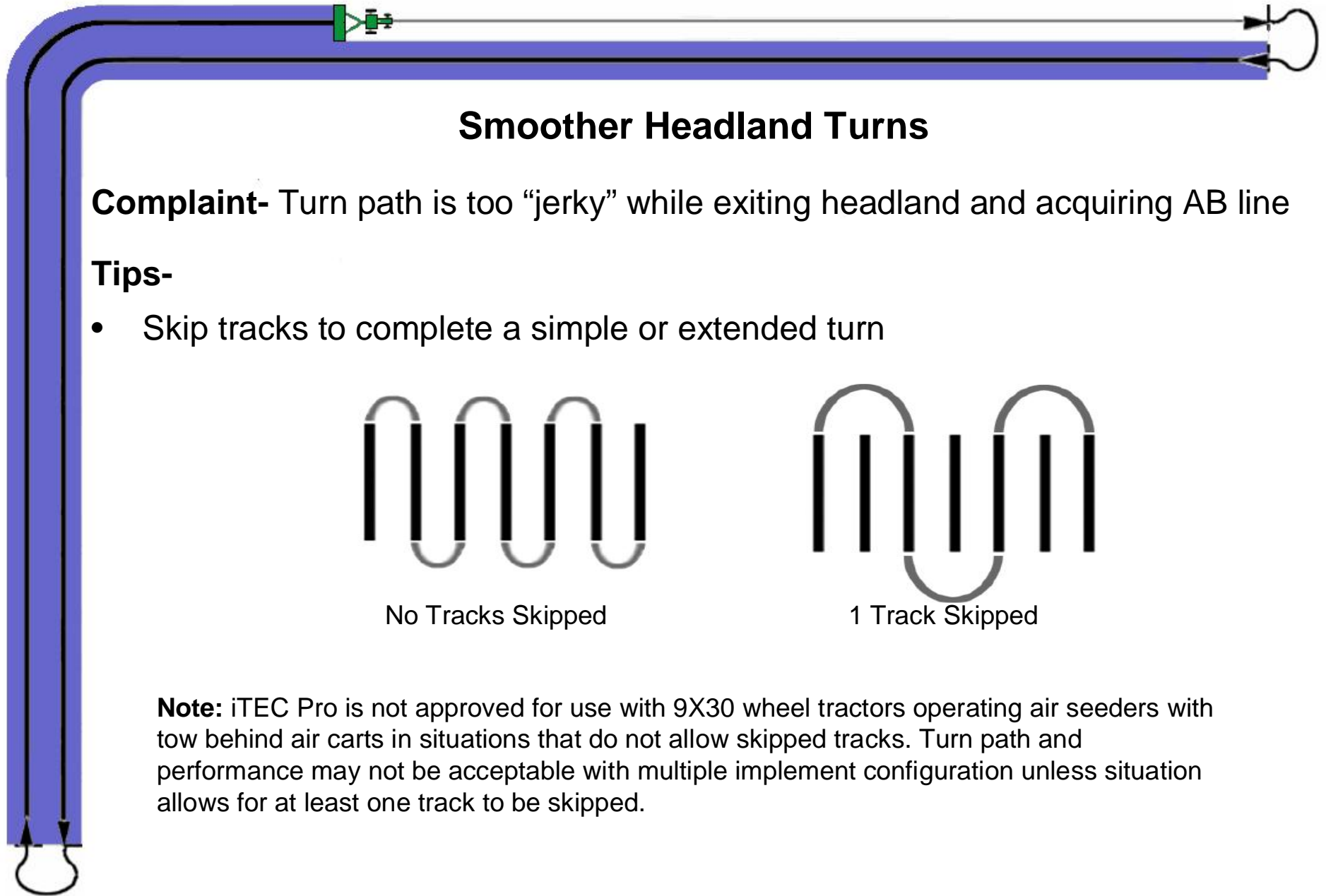
- Set turning radius of machine and implement to  $\frac{1}{2}$  Track width to generate simple turns. (Ex. Implement width and track spacing of 60 ft (24R30” planter), a turn radius of max 30 ft for tractor and implement will generate Simple Turns.)



- Reduce control to connection distance (D) of implement offsets to generate more a symmetrical turn path



# iTEC Pro Best Practices

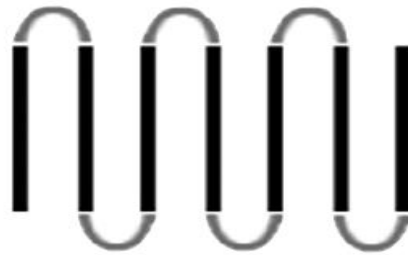


## Smoother Headland Turns

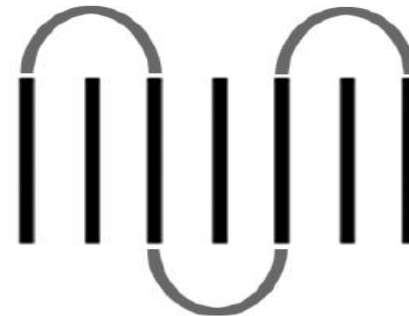
**Complaint-** Turn path is too “jerky” while exiting headland and acquiring AB line

### Tips-

- Skip tracks to complete a simple or extended turn



No Tracks Skipped

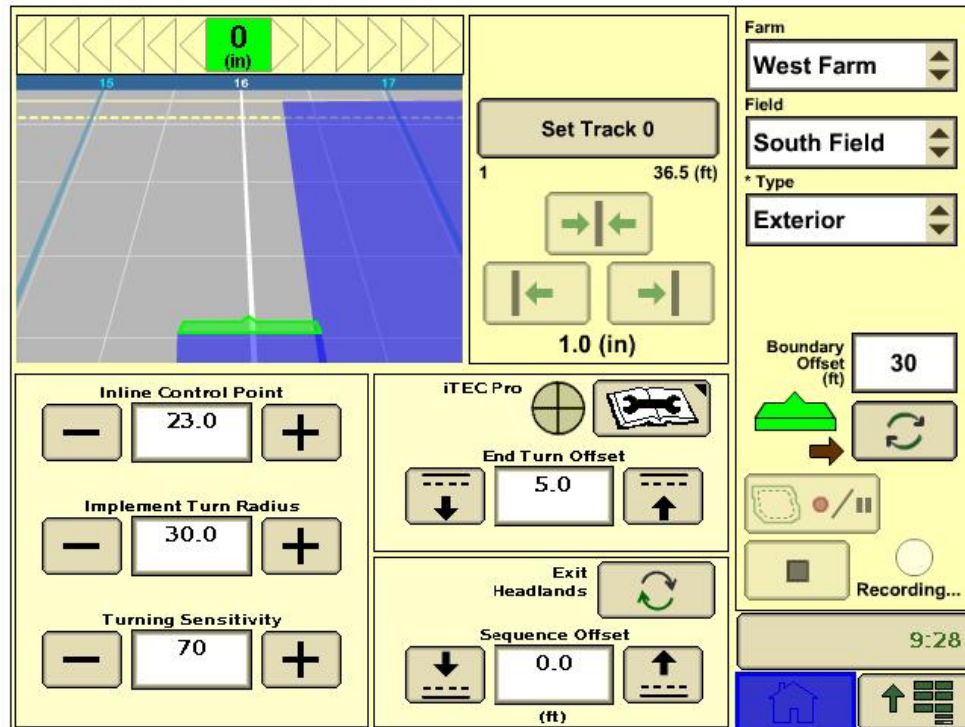


1 Track Skipped

**Note:** iTEC Pro is not approved for use with 9X30 wheel tractors operating air seeders with tow behind air carts in situations that do not allow skipped tracks. Turn path and performance may not be acceptable with multiple implement configuration unless situation allows for at least one track to be skipped.

# iTEC Pro Best Practices

## iTEC Pro and Homepages



### iTEC options on Home Pages.

Designed to assist with field setup or minimizing button pushes required to get to the settings needed for fine tuning

Examples of the many configurable selections available:

- iTEC Pro Enable Button
- Inline Control Point
- End Turn Offset
- Toggle Recording Button
- Sequence Offset
- Shift Track
- AutoTrac Enable Button
- Decrease Steer Sensitivity
- Steer Sensitivity
- Increase Steer Sensitivity
- Farm, Field, Type Drop Down
- Record/Stop Record Button

Ex. Using the homepage to adjust end turn offset