Pairing Precision Technologies and Controlled Traffic with Strip-Till

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August 5, 2015

Introduction….

- **Located in North Central Illinois**
- **Corn, soybeans, oats, alfalfa**
- **Highly variable soils…from blue clay to sand**
- **Controlled traffic since 2011**
- **Mostly Full conventional tillage with some no-till until 2013**
- **Started strip-tilling in 2009, full bore in 2013**

Past Practices

- Moldboard plow for corn on corn
- Min-till for corn on soybeans
- No-till for soybeans and corn on rougher ground

From The Archives….

Flash Forward To Today

- **Strip-till and no-till is used exclusively on all acres**
- **Precision nutrient placement on all corn acres**
- **Broadcasted fertilizer on soybeans (soon to change..)**
- **Controlled traffic is utilized whenever possible**
- **Implement steering utilized on all field operations**

Current Practices

2nd Annual NATIONAL STRIP-TILLAGE CONFERENCE
August 5-6, 2015
Iowa City, IA

DAWN

ETS ENVIRONMENTAL TILLAGE SYSTEMS

INGERSOLL

KUHN KRAUSE

Nufarm

CopperheadAg PRODUCTS

MonTag

ORTHMAN

RAVEN

BLU-JET

Yetter FARM EQUIPMENT

Nutra-Flo PureGrade Liquid Fertilizer

Implement Guidance

- **Types of implement steering systems**
  - **Active Systems**
  - **Passive system**
- **Advantages**
- **Disadvantages**
- **My personal experience with each system**
- **Is it right for you?**

Active Systems

- **Achieves the highest level of accuracy possible**
  - **Takes implement drift out of the equation**
- **Great for contours and rough terrain**
- **Varying implement widths is no longer an issue**
  - **Strip 16…..Plant 24**
- **Great for custom work**

Rolling Terrain

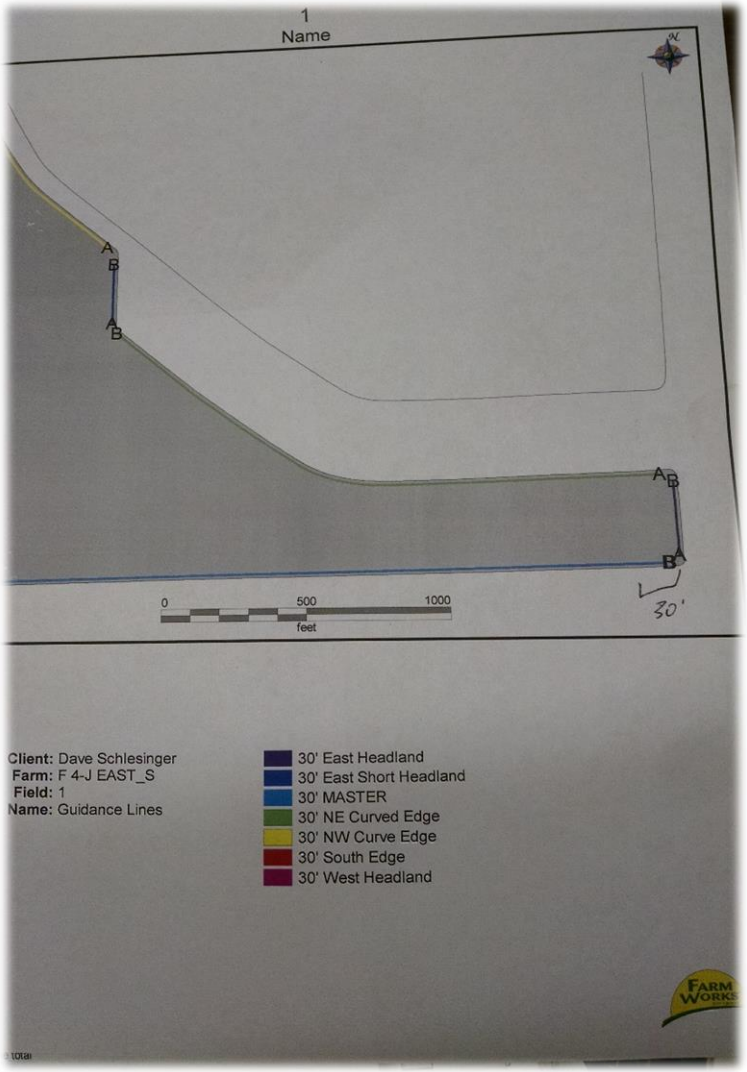
Contours

Varying Implement Widths

Custom Work

- **No need to worry what size planter the client is running**
  - **8-12-16-24….does not matter**
  - **Even works when the client does not have guidance**
- **Helps justify the cost of the system**
- **Adds additional value to the system**
- **Fields should be mapped out for simplicity**

Mapping Fields



Passive Systems

- **A great way to get your feet wet**
- **Reduces implement drift**
- **Active Guidance can always be added later**
- **Works best for planters/seeders and other low-draft implements**
- **Best results when primary pass was made with an active system**

Passive Systems…

Theory of Operation

One Disadvantage……

Advantages/Disadvantages

- **Advantages**
  - **Eliminates or reduces implement drift**
  - **Keeps you in the zone**
  - **Can use different implement sizes**
  - **Reduces stress**
- **Disadvantages**
  - **Cost**
  - **Calibration time**
  - **Brand specific**

Implement Steering Overview

- **Cost**
  - **Active systems:$12,000-$31000+**
    - **Requirements**
      - **Unlocks**
      - **Controller/platform kit**
      - **Steering Hardware**
  - **Passive systems:$4000-$5000**
- **Different types of systems**
  - **ETS Steerable Cart, Orthman Tracker, Trimble TruGuide, John Deere iSteer/iGuide, Reichhardt**

Introduction to CTF

- **Greatly reduces soil compaction**
- **In most cases you can get in the field sooner and stay working longer due to tramlines**
- **Give you the ability to perform certain field operations at higher speeds**
- **Significantly reduces crop damage**
- **May be easier to implement than you realize**

Benefits of CTF

Start Sooner…Run Longer

- **Both pictures taken 2 days after a 2.5” rain.**
- **Long term no-till field and CTF=No ruts!**

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Start Sooner….Run Longer

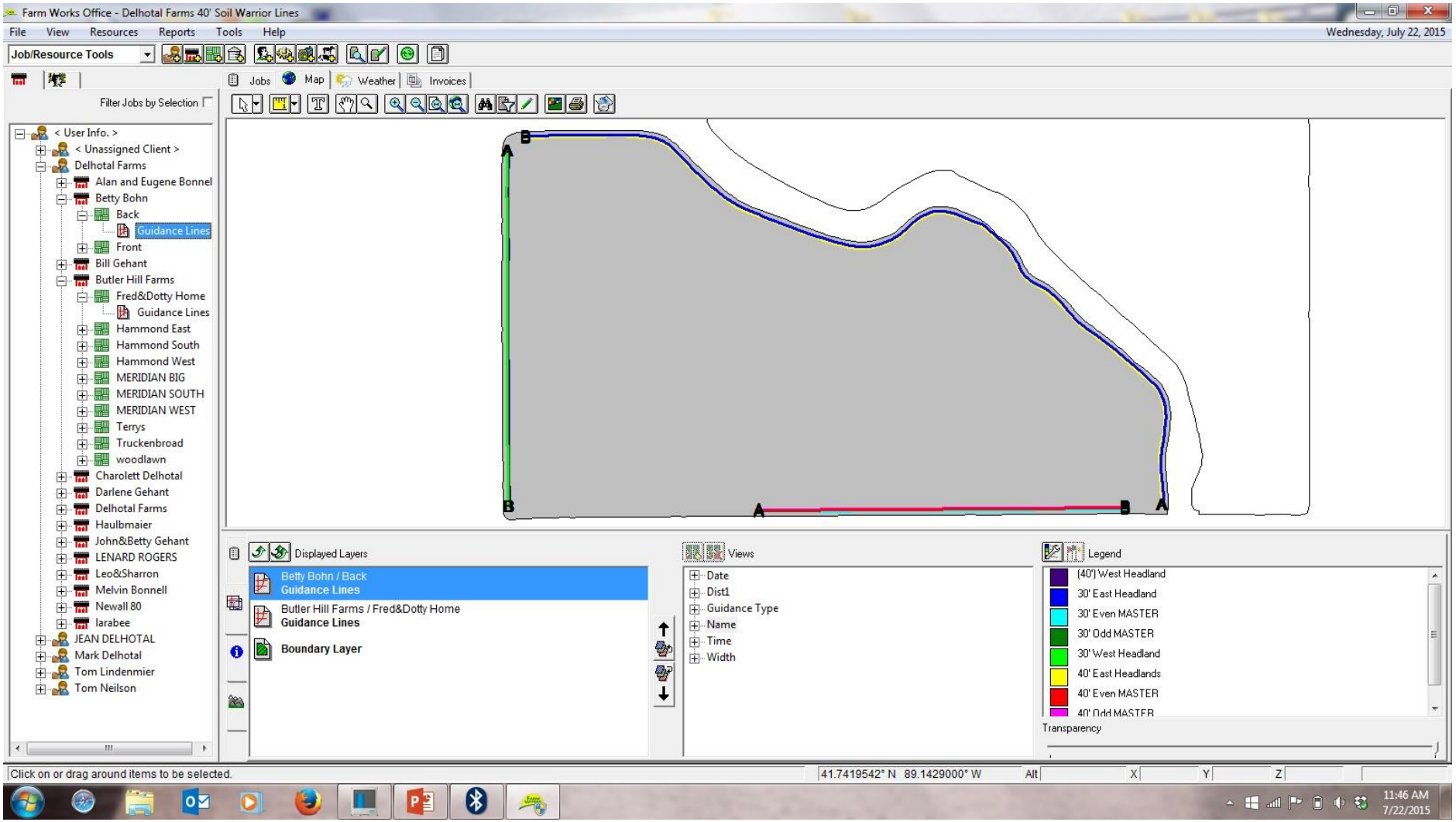
- **Tramlines are usually much firmer than the surrounding soil**
- **Because of a firm footing combined with the soil structure due to strip-till the chances of rutting are reduced but not eliminated**
- **In long term no-till fields most of the time rutting is not much of a concern**
- **Rutting is most likely to occur in fields coming out of conventional tillage due to soil structure.**

Reduces Crop Damage

- **When sidedressing half as many plants are destroyed on headlands**
- **Pinch rows are eliminated during planting which add up to a 7-15 bpa disadvantage compared to rows not affected**

Starting Out With CTF

- **Map fields with clearly defined tramlines**
- **Modify tractors for desired tram width (120”)**
- **Educate other operators on controlled traffic farming so they have a clear understanding of how to perform certain field operations**
- **RTK Guidance is a must**
- **Be patient, switching to a full CTF system may take a few years.**



Modifying Equipment

- **Installing spacers on front axle to achieve 120” spacing**
- **Removing rear duals and setting tires for desired spacing**
- **Deciding on tire size**
- **Adjusting air pressure for the application**

CTF Transformation

Front Spacer Installation

Rear Axle Setting

Right Tires For The Right Job

710s for everything else…

480’s for row crop work

RTK and Strip-Till

- **The importance of RTK and strip-till, CTF**
- **Different types of solutions….pros/cons**
  - **Single Base/Tripod**
  - **Network Solution**
- **Radio vs. Cell….Which is the best solution?**
- **Personal Experience with each solution**

Single Base/Tripod RTK

A solution where your machine is connected to a single base station which is moved or mounted permanently.

Pros

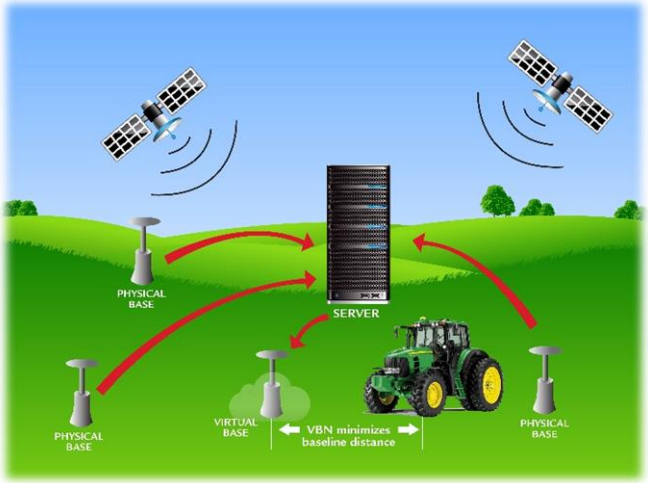
- **No annual fees***
- **One more thing you can take control over**

Cons

- **Can be challenging in hills and around trees**
- **Repeatability is difficult with tripod**
- **If the base goes down, you have to stop the planter to fix it**
- **Equipment cost**

***If you own the base given it is not a 450 setup**

Network RTK Solution



A "Network Solution" uses a group of bases to increase reliability and accuracy.

Pros

- **Base setup and maintenance is off your shoulders.**
- **If a base drops offline you can continue planting**
- **Multiple base stations means increased accuracy and repeatability**

Cons

- **Yearly subscription fees**
- **Equipment cost**
- **Cell service in some areas**

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