

TILE PRO CONTROL OPTIONS

- AMW or Trimble: GPS control
- Trimble Laser Packages



GPS CONTROL OPTIONS

- GPS eliminates the need for manual laser surveys (60%+ time savings), is user-friendly, does all tile plan calculations and will capture tile line location information as installed
 - WM Drain – Trimble Option: Dual Link capable
 - **AMW Pipe I, II and III series software:
Dual Link capable**
 - This presentation will focus on the AMW product

ABOUT AMW

AMW is an established software control systems provider for machine control in Construction and Agriculture.

- Software utilizes GPS satellites and RTK base station to accurately design drainage plans and control grade on installation.



GPS COMPONENTS



Display

- Touch screen Windows PC with AMW software



Slope sensor

- Measures fore/aft and side slope of plow



Machine controller

- Interfaces between Display and integrated machine hydraulics



RTK Base Station

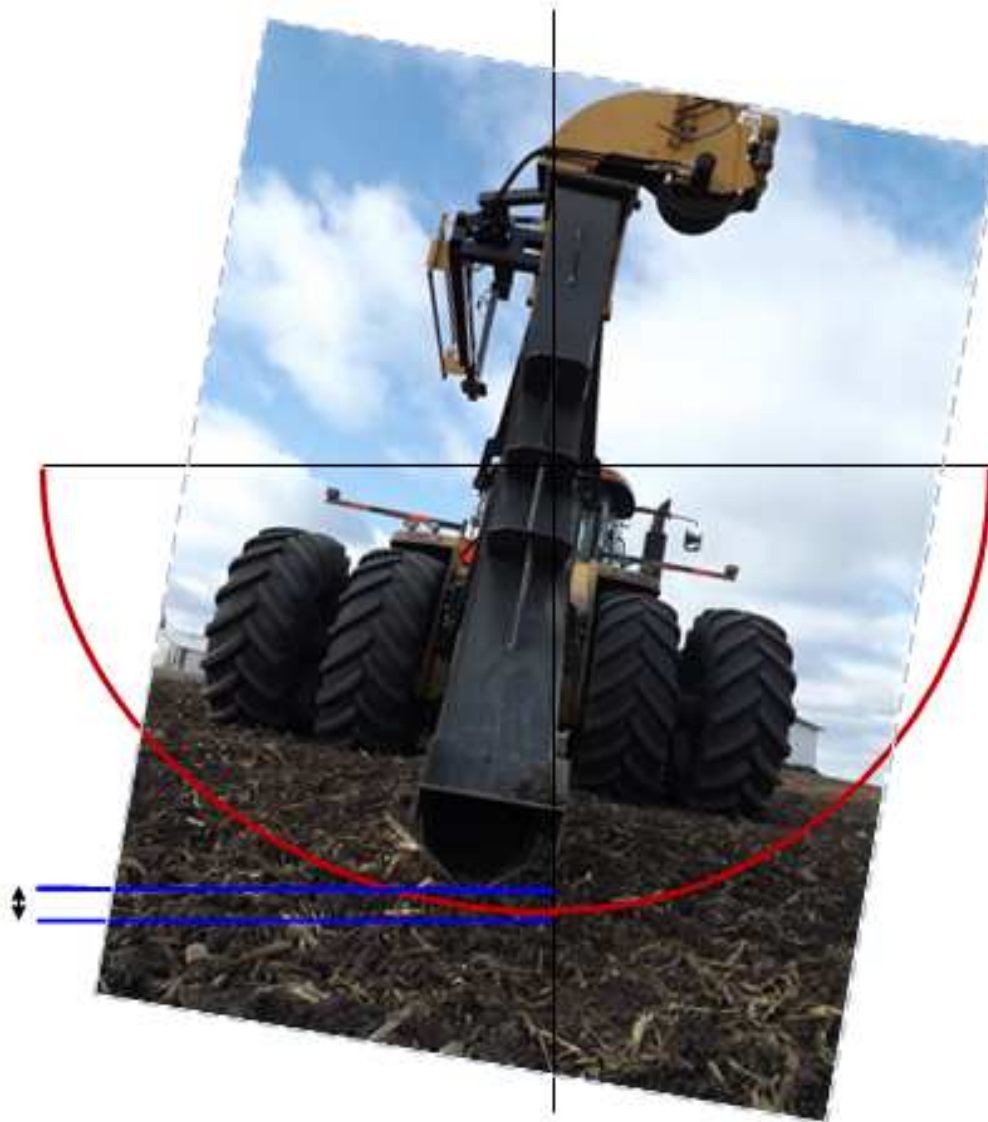
- Receives satellite signal and communicates correction to rover



RTK: Rover

- Receives satellite signal and correction then outputs position to display

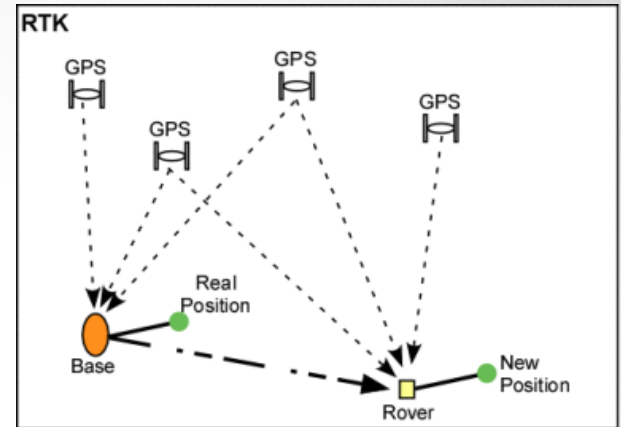
CONTROLLING THE PLOW



Crary Tile Pro also utilizes Side Slope compensation for accurate tile placement



RTK GPS



RTK – Stands for Real Time Kinematic correction.

- Capable of +/- 2cm accuracy.

Consists of two GPS receivers that communicate with each other.

- Base - is stationary and a known position after it takes readings for a period of time and then averages them to account for atmospheric anomalies or other sources of error.
- Rover – mobile GPS receiver that calculates position using GPS satellites and correction from the known location provided by the base.
- AGPS controls system works with most GPS RTK



BASIC OPERATION TILE PLOW GPS SYSTEMS AMW AND TRIMBLE (WM DRAIN) 4 SIMPLE STEPS !!

1. Drive Survey (where you plan to install the tile)
2. Lower plow to starter hole or tile outlet
3. Review tile plan the software created from the survey
4. Lay tile, or make minor adjustments to tile plan
 - Min depth
 - Max depth
 - Desired slope
 - Etc.....

AMW TOP VIEW

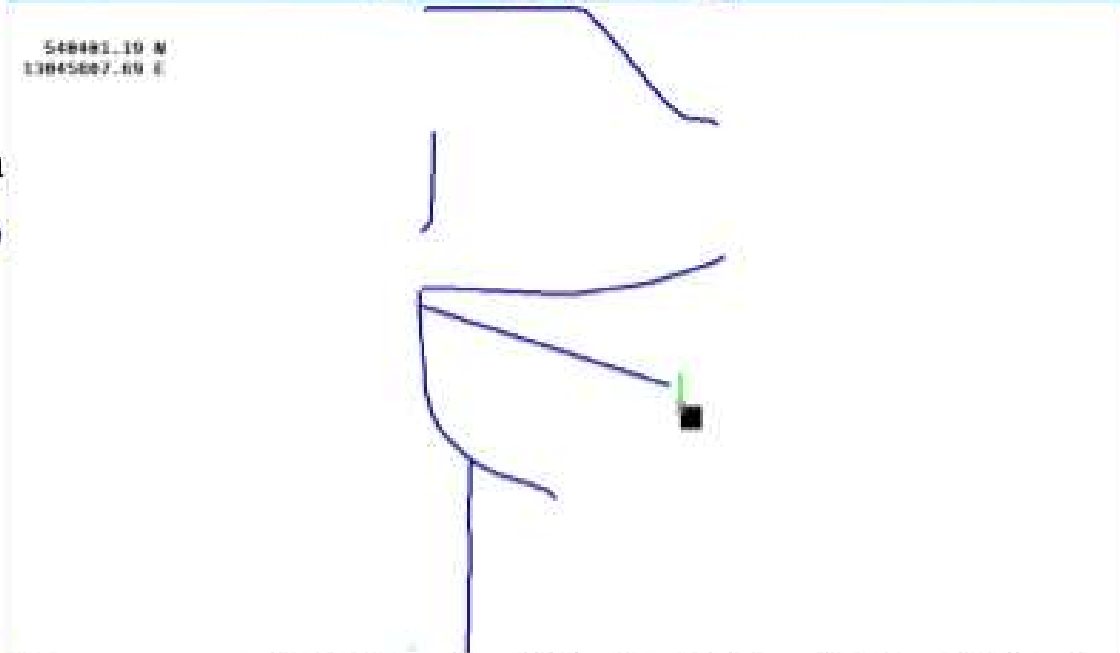
The Main Working Screen – Overhead View

Menu Bar



The menu bar contains several elements: a title bar with 'APLX Power PAK 3000-30V' and a 'PATH' label; three icons labeled 'SCREEN', 'MEMO', and a red icon; a central display showing 'ELEVATION: 739.75' and 'SLOPE %: 0.00'; two dropdown menus for 'DPT DEPTH' (set to 3.00) and 'BKT SLOPE' (set to 0.10); and three buttons on the right labeled 'CAPTURE', 'MACRO CONTROL', and 'ENV'.

Plot screen



Info Bar



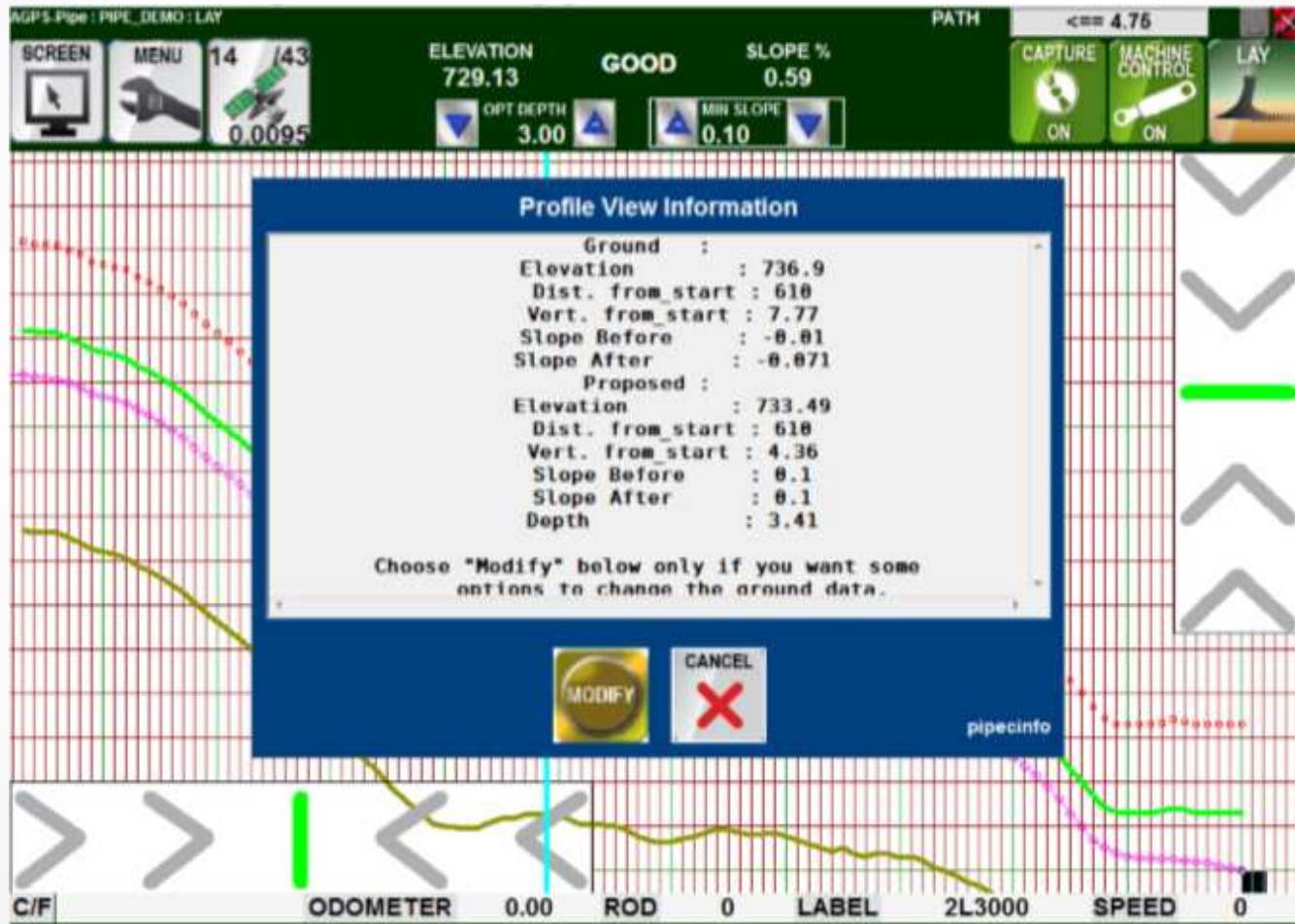
The info bar displays the following data: 'CIP', 'ODOMETER', 'ROD 0', 'LABEL 2L3287', and 'SPEED 0'.

AMW SIDE VIEW

The Working Screen – Profile View

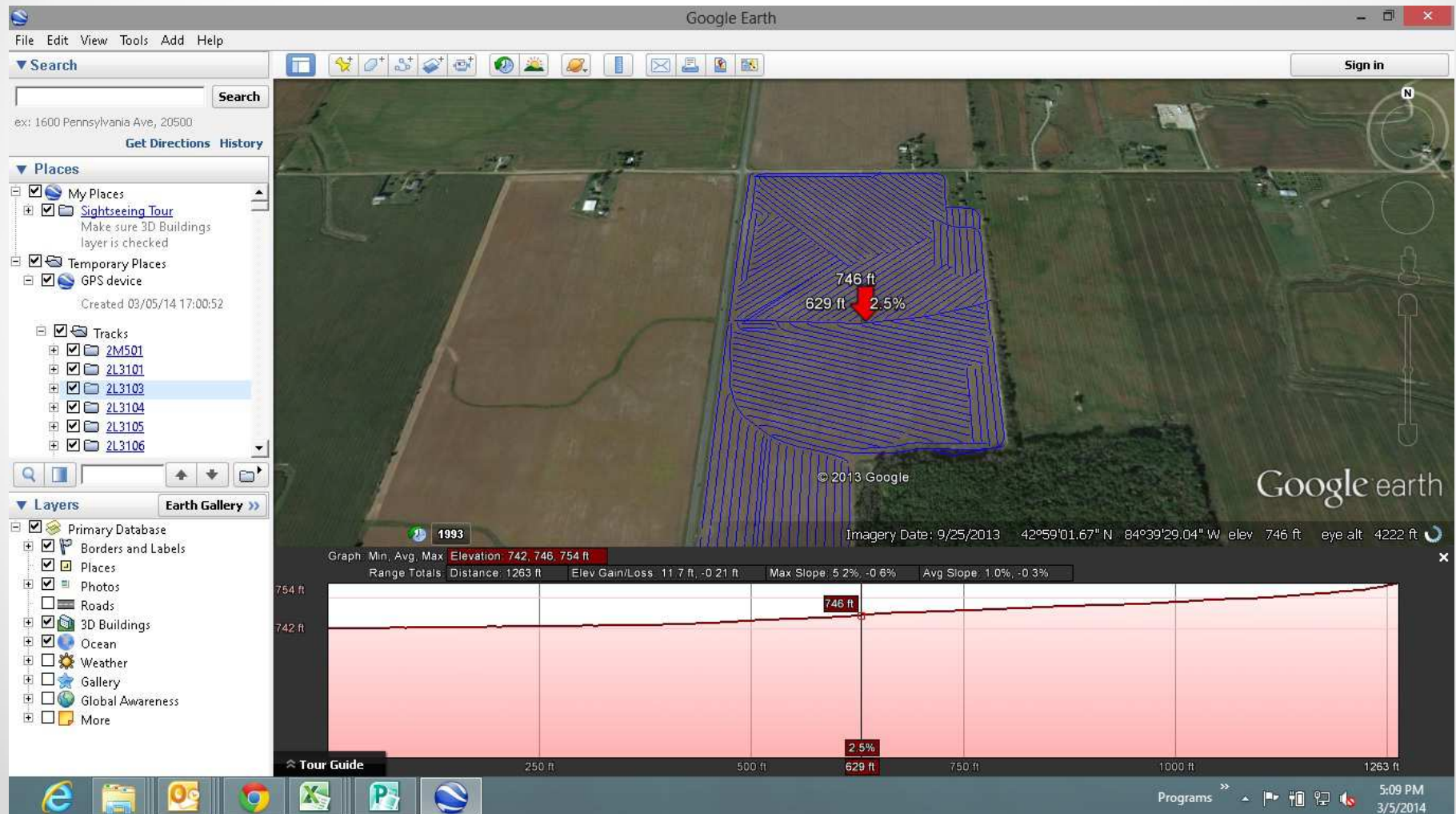


DESIGN INFO SCREEN



EXPORT DATA

- Export data and draw maps using Google earth

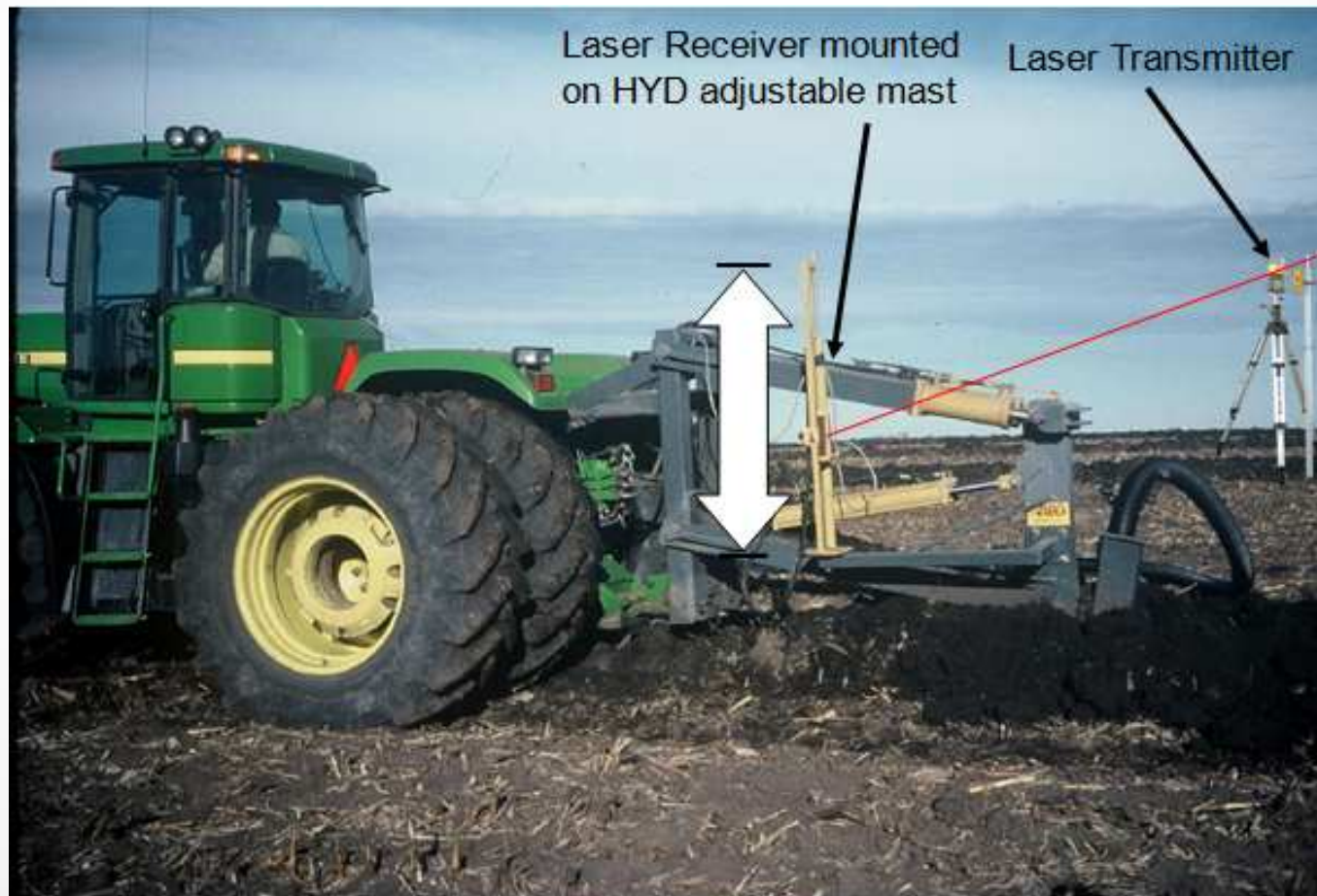


AUTO COMMIT

- User adjustable parameter that allows the plow to stay above grade when striking an obstruction, holding minimum slope until a return to optimum depth is achieved
- Eliminates a hump in the pipe that reduces pipe flow rate and drainage efficiency caused by the plow diving back down to grade after being temporarily raised due to a subsurface obstruction
- Performed automatically.... and will warn user if Minimum depth has been violated
- Exclusive to AGPS software

LASER SYSTEM OPERATION

- Transmitter – emits visible or infrared light that is picked up by a receiver on the plow, sent to a control box which manipulates tractor hydraulics and valves





GPS VS LASER



- Set base once within 2 mile range
- Works in wind and fog
- No line of sight required
- Record and display drainage maps
- Utilize existing Ag GPS equipment and use RTK for precision Ag
- Signal degradation from overhanging trees
- Negatively affected by solar flares

- Manual survey required
- Move laser to different grade brakes, adjust grade
- Negatively affected by wind, rain, fog and long distances
- Line of sight required
- Not able to record data
- Separate equipment used only for drainage and leveling
- Works well under trees
- Not affected by solar flares



**Thank You for your interest in Crary
Tile Pro from Crary Agricultural
Solutions**

