



GRADEMETRIX[®] EXCAVATOR
SITE CONTROL & GUIDANCE
POSITIONING SYSTEM



GRADEMATRIX® EXCAVATOR SITE CONTROL & GUIDANCE POSITIONING SYSTEM

GradeMetrix® Excavator is packed with industry leading technology. It is easy to use and delivered at an affordable price. The system can be installed and calibrated in less than 8 hours.

From compact excavators to large civil or mining machines, all are covered by the mastless VR500 all-in-one Smart Antenna or VR1000 Dual Antenna solutions.

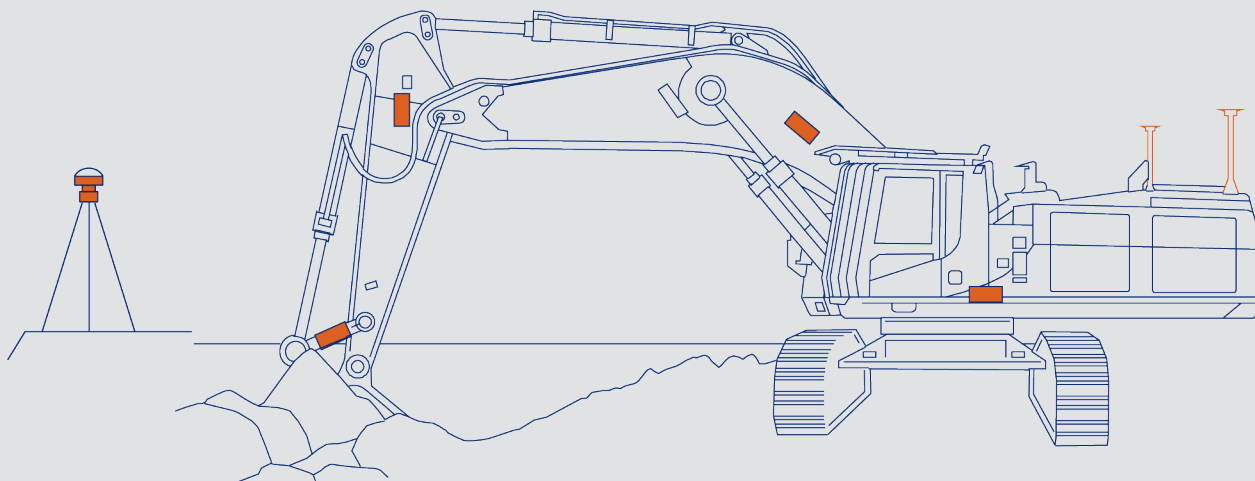
The GradeMetrix® system is designed to fit seamlessly into your existing site infrastructure using all the same design file formats and base station corrections. To ensure your peace of mind, all major components are covered by our best-in-class 3-year warranty.

New and experienced operators can dramatically increase accuracy, efficiency, and dependability with GradeMetrix®, resulting in significant ROI in your operations right away.

GRADEMATRIX® KEY FEATURES

- Access to all GNSS satellite constellations for maximum accuracy and maximum coverage in difficult environments; including GPS, GNSS, GLONASS, BeiDou, Galileo, and QZSS.
- GNSS receiver supports industry standard RTCM3.x, ROX, CMR, and CMR+ RTK formats

- 2.5D and 3D operation modes all standard.
- Operators can create trenches, slopes and layers to match existing or a required height, and create all on site from the cab within seconds. Operators can create TIN surfaces using points stored in GradeMetrix Excavator or imported from SiteMetrix Grade.
- Supports tilt bucket, tiltrotator and laser receiver as standard. Multiple buckets can be calibrated and you can switch between buckets.
- Supports swing boom and knuckle boom excavators.
- Supports DTMs or 3D linework.
- Supports industry standard file formats including: dwg, dxf, LandXML.
- Multiple design surfaces can be loaded and you can switch designs from the main Plan View.
- Cut/Fill color maps are supported to show existing progress. The data can be output in several file formats.
- Map projections or localized coordinate systems allow simple site coordination to existing coordinate systems or creation at new sites.
- Operators visualize the site in real time, eliminating delays and enabling fast, efficient completion of all sitework.

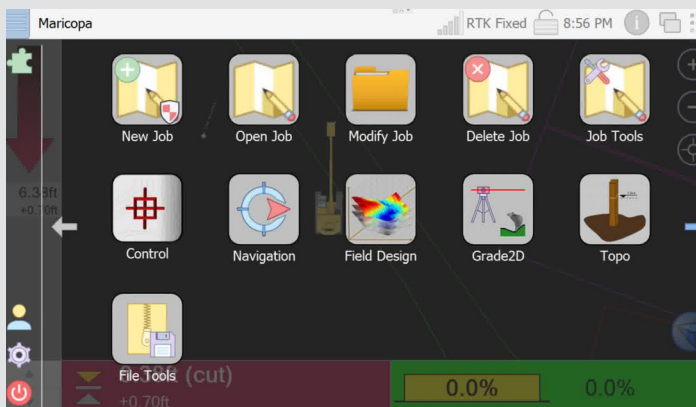


COST SAVINGS – EMBANKMENT OVERCUT

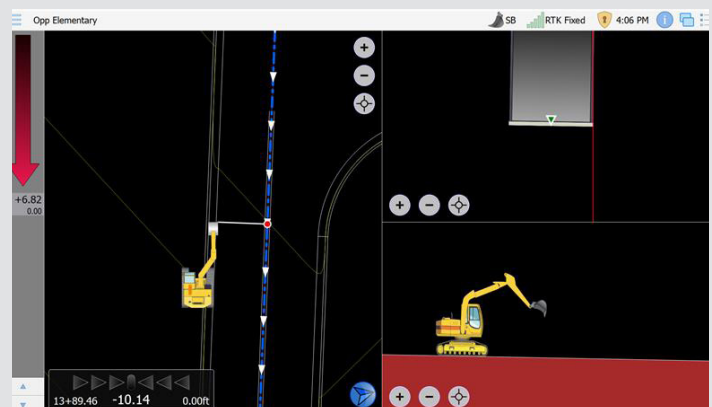
If a batter is overcut by 0.5m over 500m length, the overcut would total 2,500m³. Additional excavator time could be as much as 25h and 166 truckloads would be needed at 15m³ per truck. The total cost would be more than the cost of the guidance system to prevent it.

A GNSS guidance system saves you between 30-50% in material cost, staff cost, and operation cost and improves your production time by the same factor.

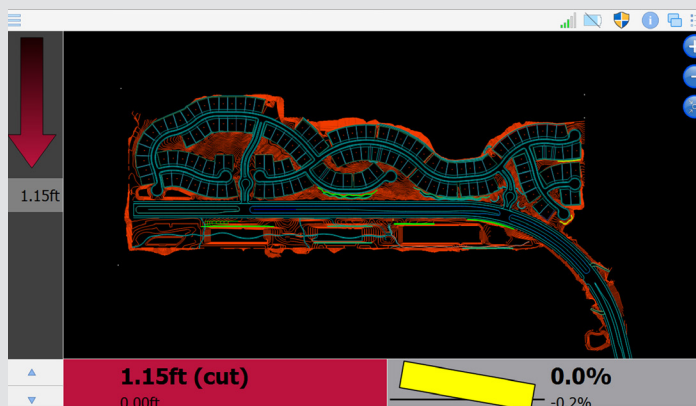
Intuitive Menu Design



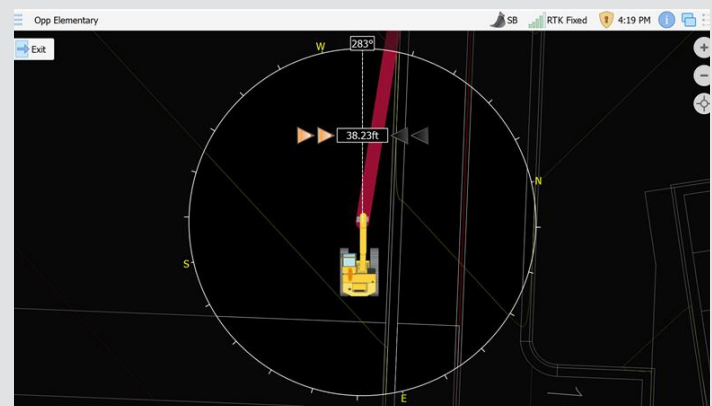
Multiple Views



Supports large DTM's



Navigation to a Point



OUR BENEFITS AT A GLANCE

- **RIGHT FIRST TIME** – Less Passes – Work Faster – Reduced Operator Skill Requirement Reduced Fuel Costs
- **MATERIAL SAVINGS** – Optimize Remove/Replace – Improve Transportation Cost – Control Soil Disposal Cost
- **REDUCED SURVEY COST** – Less Site Preparation – Less Checking – Less Rework – Less Stake Replacement
- **IMPROVED SAFETY** – Less Personnel Around Machines – Operator Stays In Machine
- **3-YEAR WARRANTY** – Best In Class Warranty
- **EASILY ADAPTABLE** – Primary Components Can Be Moved Easily And Quickly Between Machines

2.5D – USE GNSS AT EVERY SITE

The embedded 2.5D function in GradeMetrix® allows you to use the GNSS Guidance Technology for a vast array of simple and useful applications without the need for complex 3D files from a land surveyor.

Using only a few keystrokes, you can easily create simple layers, single or dual slopes, ramps, and even roads: using your GNSS as a reference.

Also, using the optional Hemisphere C631 base station, you can provide your own RTK corrections to your excavator.

In addition to the 3D model benefits, the 2.5D functionality will significantly speed up your work cycles and dramatically reduce your ROI time.

RUGGEDIZED HARDWARE

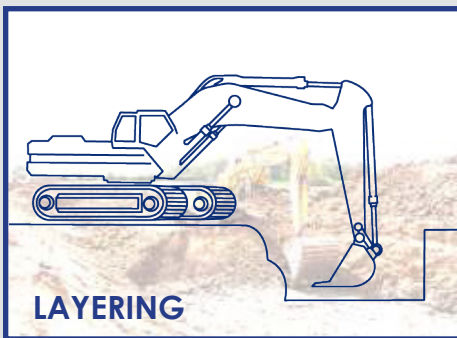
Hemisphere’s GradeMetrix® Excavator solution is powered by hardware components that have undergone extensive shock, vibration, and environmental testing to withstand the harshest job site conditions.

The system is designed in a unique format centered around the VR1000 GNSS RTK Receiver. The VR1000 or VR500 Smart Antenna, with its integrated UHF radio and GNSS receiver requires a single cable connection to the IronTwo display resulting in the most simplified installation and calibration procedure on the market, and is the result of multiple decades of experience merging GNSS technology with precision applications.

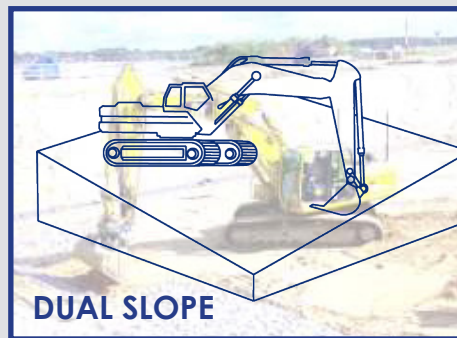
All the GradeMetrix® system key components are covered by an industry leading 3-year warranty. You can have peace of mind and confidence that your GradeMetrix® Excavator solution will provide superior results and performance for the long term.

APPLICATION EXAMPLES

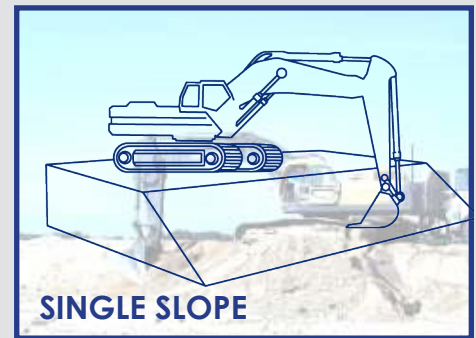
ROAD CONSTRUCTION



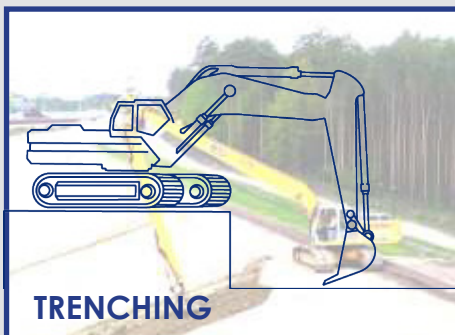
WATER RETENTION BASIN



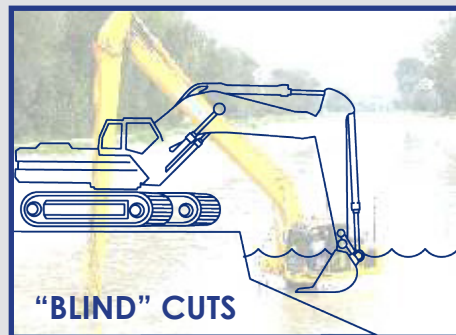
EMBANKMENT WORK

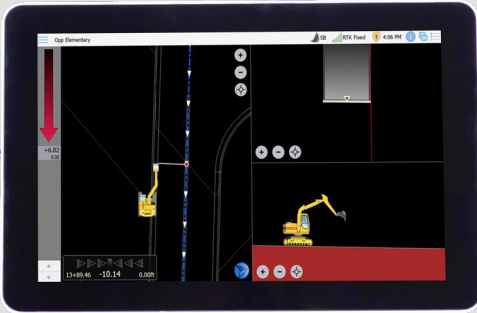


DIKE CONSTRUCTION



CANAL REDEVELOPMENT





IRONTWO RUGGED DISPLAY

- 10" (1920 x 1200 resolution) touchscreen
- Microsoft Windows™ operating system
- Sunlight Viewable display
- Easy and intuitive user interface
- Handles large 3D DTM project files
- Wi-Fi, Bluetooth, and ethernet support
- Integrated cellular modem for Ntrip corrections or remote/ data support
- IP65 rating



VR500 GNSS RTK SMART ANTENNA

- Mastless position and heading RTK Smart Antenna for compact excavators
- Multi-frequency, Multi-GNSS GPS/ GLONASS/BeiDou/Galileo/ QZSS capable
- Integrated 400 MHz UHF radio
- Powerful WebUI, ethernet, CAN, serial, Bluetooth and Wi-Fi
- IP69K and MIL-STD-810G
- Hemisphere GNSS Athena® RTK engine
- Supports Hemisphere GNSS Atlas® L-band Correction Service



VR1000 GNSS RTK HEADING RECEIVER

- Multi-frequency, Multi-GNSS GPS/GLONASS/BeiDou/Galileo/ QZSS capable
- Rugged GNSS Receiver
- IP69K and MIL-STD-810G
- Integrated 400 MHz UHF Radio
- Powerful WebUI with ethernet, CAN, serial, Bluetooth and Wi-Fi connections
- Hemisphere GNSS Athena® RTK engine
- Supports Hemisphere GNSS Atlas® L-band Correction Service



A46 GNSS ANTENNA

- IP69K Enclosure /EP455 Shock/Vibration Rating
- Compact Design
- Signals Received: GPS L1/L2/L5, GLONASS G1/G2, BeiDou
- B1/B2/B3, SBAS, L-band, Galileo E1/E5a and b, and QZSS
- LNA Gain: 30 dBn



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