Laser grading is a term in the athletic field construction industry used to describe the process of moving soil with a grading mechanism equipped with an automated control. Laser guided controls can be mounted on any machinery including track hoes, trenchers, motor graders, bulldozers, tractors and infield groomers. In fact, anything with a motor and hydraulic supply can be mounted with an automated control system. The fundamental reason to use laser guided equipment is that it creates the most accurate and consistent grade and ultimately improves the drainage, usability, safety, and overall appearance of a sports field.

One of the biggest myths about laser grading is that some fields cannot be laser graded because of the elevations of land or fences that directly encase the field. This is usually untrue. A field can often be laser graded without moving the surrounding topography. In order to do this, you must do the following procedure.

First, grid the field on 40' or 50' centers, then shoot all grades on a scale drawing. (Note: most fields have some type of original blueprint so that scale drawings can be made very easily by tracing). After you have a drawing with grades shot, you can evaluate which way the water is going. After determining where the water can drain the most efficiently, you will then determine how much slope you will laser grade. One tenth of an inch in 10 linear feet is 1% of slope, so 1' of fall in 100 linear feet equals 1% slope.

After compiling your information, you need to measure the length of slope to determine your slope %. For example, if you have 4' of fall over 200 linear feet, you automatically know that is 2% of slope (4/200=0.02). Now you can determine if there are any problems between the points such as a big mound of soil which is holding the water back from draining or a big dip that is holding water. This process identifies problems and helps you determine how much soil to remove. The automated laser guarantees the 2 points (from high to low) will have continual slope with no holes or high spots to get through. The lowest point is your bench mark so you know you will get positive drainage.

Now that you have a plan, you need to make sure have the right type of equipment to complete the job. For instance, laser grading requires a 1st to 2nd grade precision. The automated laser guarantees the 2 points (from high to low) will have continual slope with no holes or high spots to get through. The lowest point is your bench mark so you know you will get positive drainage.

In summary, automated laser grading guarantees safety and improved drainage which are the biggest issues on any field. Understanding the method and how it directly impacts the finished result on any playing field should make it a mandatory trade to be included on any field renovation or construction. You do not let plumbers do electrical work, so why would you let a site contractor do electrical work, either? Site contractors move soil and install the utilities more efficiently and cost effectively. The same logic should go to the Architect / Engineers by specifying laser grading as a trade and including them on all field construction projects. When renovating and constructing fields, properly sized equipment and trained operators make the difference.

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