

Laser Guided Grading



One should also note whether the machine is laser controlled or laser indicated. The first term means that a signal received from a laser beam automatically controls the grading machine. The second term means that an operator must read the laser indicator and then proceed to operate the machine manually.

Automatic systems offer quicker results, and they protect against loss of accuracy due to operator error. Astute buyers ask which type of system they are getting for their investment. They seek information about the performance characteristics of the equipment that will be used, and they inspect the equipment's condition.

Machinery: Many types of construction machines can be equipped with laser control. Each type is suited to a specific job.

A box blade is well suited to a project that requires a finish or fine grade. A bulldozer is best suited to establish sub grade, and to move large quantities of dirt.

What type of equipment does your contractor propose to use for your project? Does this strategy best meet your needs? The answers to these questions will affect the cost and accuracy of the work performed.

References: Ask contractors for references to check the quality of their work. Ask former clients about accuracy, and ask them whether the job was completed on schedule.

Sorting through the terms

Single-Pole Receivers: This type of grading equipment relies on a single-pole laser receiver that's generally mounted in the middle of a cutting blade. It can be mounted to a bulldozer blade, a front-mount box on a skid steer, a three-point hitch drag box, or any of several configurations of small-wheeled pull boxes which are pulled by tractors.

Dual-Pole Receivers: This equipment uses two receivers: one mounted on each end of the cutting blade. Each controls its own end irrespective of the other.

Laser Transmitters: Most transmitting sources project a beam over a given distance. One should note that there is a degradation of accuracy over distance. Usually, 1/8 inch of accuracy is lost per 100 feet of distance from the transmitter.

An interested client should ask the contractor about the type of transmitter that will be used and the manufacturer's stated accuracy of that transmitter. It's also important to find out how the contractor proposes to use that piece of equipment to minimize the loss of accuracy in the overall project.

Like any capital purchase, an investment in laser equipment or laser grading services must be an informed one. It is entirely possible to hire a laser grader and not receive the results that you assumed came with the equipment and terminology.

Pay close attention to the job specifications. They must give a noted deviation over a given distance. This might be listed as "+/- 1/4-inch deviation over 200 feet," or it could be phrased "within 1/4-inch deviation over the plane of the field." Note the difference in terms. The above noted criteria are usual and standard in this industry.

You may rely on the specifications and not be so concerned with the methodology. When this is the case, the bid document must have enforceable and measurable parameters so that the contractor has to perform to the bid document.

Your methods of checking the contractor's performance must be clear and above reproach. The checking entity must be able to accurately check the desired grade.

A knowledgeable buyer coupled with a well-equipped, knowledgeable contractor can build a highly desirable, state of the art field. But the converse is also true, even if high-tech equipment is used. Buyers simply need to know what they're getting for their money.



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IRRIGATING Sports Fields

by Robert A. Bodi, CID, CLIA, CIC

Considering having an irrigation system installed in the near future? An automated irrigation system can be your worst enemy or your best friend, depending on how well you plan it, and how you have it installed.

Do your homework

There are many different types of irrigation equipment out there. Each brand of irrigation has its pros and cons. Talk to people in your area about their irrigation, and let them tell you what they like and dislike about their systems.

Be sure to ask pointed questions. Ask how long their systems have been in use. Ask if all the heads are functioning properly. Ask what they'd do differently if they could start again.

You'll be surprised how much people like to talk about their irrigation systems. The more you learn about other people's experiences, the better off you will be.

One of the hardest decisions you'll face is the choice of equipment for your fields. There are

many different manufacturers out there. Most of them have their strong points, and some of them have no strong points at all. Be careful.

When word gets out that you're considering an irrigation project, every distributor will be at your door trying to sell you their goods. If you've done your homework, you should have already made a decision about the type of equipment you want to use.

Don't settle for gimmicks or bells and whistles. Remember, all irrigation equipment is only as good as the distributor that stands behind it.

Choose a qualified designer

Hopefully, after you've done your homework, you'll have built a list of irrigation designers. When you approach these designers, ask them the same types of pointed questions you used before.

Remember that these fields are your babies; no one knows them better than you do. A lot of designers like to blow smoke about their

qualifications. Have candidates give you references and call them. I would also ask to see some of their designs.

Make sure that the designer you choose is going to be available through the entire project. Make sure your choice will give you a set of as built when the job is complete. These are a must for both you and future field managers.

On the technical side, ask designers if they will be able to give you a pressure chart for the valves and ends of lateral runs. This shows the dynamic pressure rate at each valve and at the last head on each zone.

Before designers can provide this information, they will need to know the pressure per square inch (PSI) and flow rate at your point of connection (POC). For an average ball-field, it should take no longer than 15 minutes to complete a PSI chart.

Last but not least, make sure your designer is certified. The Irrigation Association has a Certified Irrigation Designer classification and so does ASLA.

Choosing a contractor

Look for a contractor who is experienced with the type of equipment you're using on your fields. Many times, the largest contractor is not always the best. More times than not, they are too strung out, and they don't provide the personal touch you want.

On the other hand, a small contractor may not have the capabilities to see the job through. The size of the contractor is not the most important issue, as long as the one you choose can install your system correctly.

It's always best to narrow the list of contractors before you choose. With a manageable short list, you can visit your candidates' installation sites. This will tell you more about them than anything else.

Try to answer the following ques-



Courtesy: Hunter Irrigation

Figure 1A

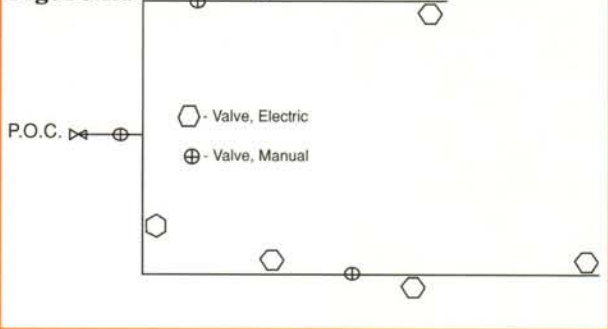
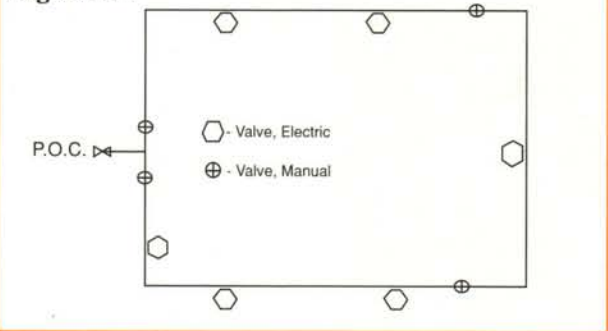


Figure 1B



tions: Do they have adequate equipment? In what condition do they keep their work sites? Do their employees have a good work ethic? Is everything in order?

Design considerations

• **Water speed:** A poorly designed system is your worst nightmare. One thing you want to insist on is that all water flowing through your piping does not exceed five feet per second. This is an industry standard. Your designer should know this and stick to it.

If the designer you choose tries to say that this standard is unimportant, go to someone else. If your contractor does not want to put the pipes in as they are drawn, find another one.

Any irrigation system installed with poor hydraulics will become a system you wish you had never seen. Water traveling too fast through piping causes excessive water hammer, leaks, and loss of pressure.

Believe me, if your water travels faster than five feet per second in your piping, you will have problems. Many designers and contractors will tell you that the speed of the water in piping does not matter. People also used to think the world was flat.

• **Clocks:** There are many different clocks on the market. Be sure to choose one with cycle and soak capabilities, so it can water zones multiple times a day. This is important for those soil profiles that have a low water infiltration rate. It allows you to water for a short period, let it soak in, and water again.

• **Isolation:** Another feature you'll be glad to have is isola-

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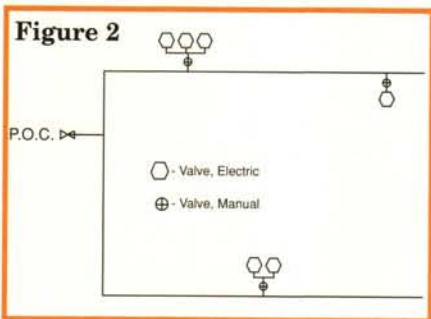
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tion valves on your main line. These enable you to shut down portions of the main line for repairs, while the rest of the system remains pressurized up. Well planned and installed isolation valves give you much more control over your irrigation system (see **Figure 1**).



You'll want to use your isolation valves before your electric valves. This will allow you to work on any valve and/or zone without shutting down the entire main line (see **Figure 2**).

Quick connections: Don't overlook the importance of quick connections. These can help keep dust down in your infield, and they can

also be used for cleaning concession areas, walkways, and parking lots. Placed strategically, quick connects will be a great asset to your system.

Air vents: Air vents release air from the main line to the atmosphere. This is an important consideration in high-pressure systems and systems that experience elevation changes.

Blow-out: Hopefully, you'll be able to install a blow-out valve at the lowest point of your mainline. This will allow you to drain the system for service and winterizing. Remember to have it installed at your system's lowest point, so that gravity can do its thing. Also, make sure that there is adequate drainage where the valve empties.

Skinned areas: It's a good idea to have a separate zone specifically for your skinned areas. This will help you mix your field-drying products, it'll help keep down dust, and it'll make you look good on game day. You can activate the infield zone 15 minutes before game time to give it just enough water to make the field look great.

True scrubber: If you're planning to pump water out of a lake or to use "dirty water," be sure to use a

true scrubber valve. This will save multiple headaches in the future. The scrubber valve wipes itself clean and flushes contaminants out of the valve.

Don't be afraid to ask questions to learn about irrigation. The more you understand, the better your system will be.

So many systems out there are inadequate because of poor design and poor installation. When all is said and done, you're the ones who have to keep your fields playable and in the best condition possible. Don't be afraid to tell your designer and contractor what you want, and demand quality in their work.



Robert A. Bodi is director of the 375-acre property of Bellevue Baptist Church in Cordova, TN, which includes the Joy Christian Athletic Complex, STMA's 1997-1998 Softball Field of the Year. He's an Irrigation Association Certified Irrigation Auditor (CLIA), Contractor (CIC), and Designer (CID).

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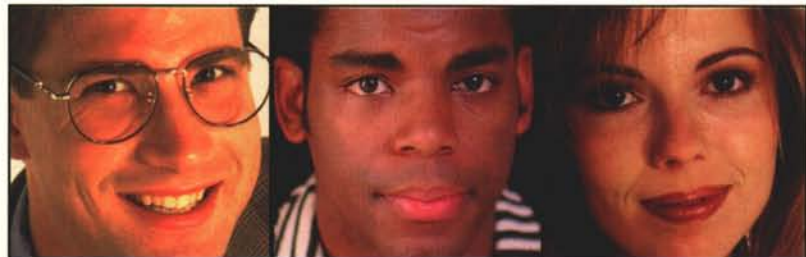
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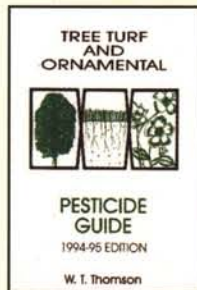
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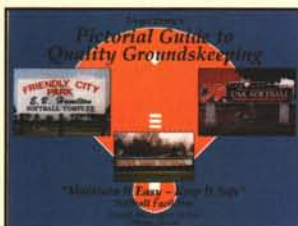
Sports Turf Management Program-Maintenance & Renovation Planning Guide, by Ashman & Associates
This manual was developed to provide a coherent plan for the management of the baseball field playing surface and provides operational guidelines for the grounds crew to use as part of the maintenance plan. Enhances the "playing conditions" of the field by elevating the maintenance standards to the highest level possible. Complete descriptions of the maintenance protocol and identification of key issues to be discussed before starting objective maintenance procedures. This book provides a plan of action outlining the tasks to be completed and benchmarks to measure the progress of the program. 160 pgs.

4024 \$105.00



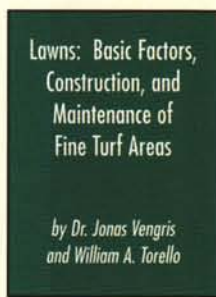
Tree, Turf, and Ornamental Pesticide Guide, by W.T. Tomson This is one of the few references today designed as a guideline to pesticide usage in the specialized ornamental field. It lists the major ornamentals grown either in the home or garden, in nurseries, in greenhouses, or in commercial production with a cross reference as to what pesticide may be used on them. Insecticides, herbicides, fungicides, and growth regulators are listed along with what each will control. This is a valuable tool for PCO's, nurserymen, greenhouse operators, grounds superintendents, turf specialists, etc. 200 pgs.

4127 \$18.50



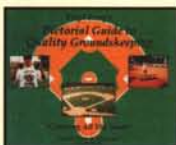
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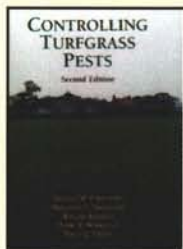
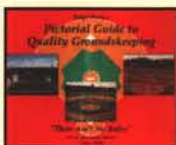
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Looking to the Future

STMA in Action

Sports Turf Managers Association recognizes that the future of this industry lies in the education, dedication, and commitment of outstanding students. The association and its supporters issued six scholarships at the 10th Annual STMA Conference and Exhibition in January to invest in this promising future.

The \$500 Dr. Fred Grau Scholarship was instituted in 1997 to honor students in two-year technical programs or community colleges. This year's recipient, **Jeffrey Limburg**, is a sophomore majoring in sports and commercial turf management at Michigan State University.

The association awarded two \$750 scholarships to undergraduate students in four-year college or university programs. **Chad Follis**, a senior

majoring in general agriculture / turfgrass at the University of Missouri-Columbia, took home one of the awards. The other was presented to **Marshall Jennings**, a senior majoring in plant and soil science / golf and sports turf at Mississippi State University. A \$1,000 award was presented to **Stacy Bonos**, a graduate student pursuing her Ph.D. in plant biology / turfgrass science at Rutgers University.

The Toro Company has established two scholarships in the name of longtime green industry researcher and consultant, Dr. James R. Watson. Undergraduate **Sarah K. Martin**, a senior majoring in landscape horticulture / turfgrass management at Colorado State University, accepted a \$1,000 award. A \$1,500 scholarship was issued to **John Sorochan**, who is

currently serving as a graduate assistant while pursuing his masters degree in sports turf research / plant physiology at Michigan State University.

Funding for the STMA scholarships comes from the membership through participation in the raffle and the silent and live auctions at the association's Annual Conference every January. The scholarship fund also benefits from special contributions. In addition to the monetary award, the STMA, Fred Grau, and Dr. James R. Watson scholarship recipients receive full registration to the STMA Conference, and up to \$500 toward expenses.

Chapter news

Florida Chapter #1: The Florida Chapter is planning an Apr. 20 meeting at Palm Beach Gardens. The focus

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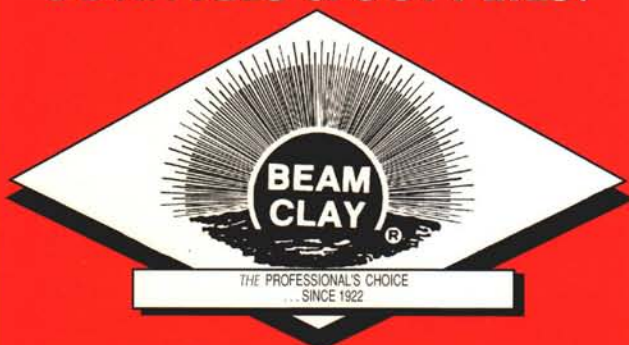
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