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SEPTEMBER 1998

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Field Trip

I recently had a chance to get away from my desk for a trip into the field. The Midwest Chapter STMA was holding a workshop in my area, so I decided to venture out to see the association in action.

The prospect of getting a little bit of fresh air in my lungs and feeling the warmth of the morning sun on my neck would have been enough to lure me to the Park District in Carol Stream, IL, that Wednesday, but curiosity had just as much to do with it. Though I work closely with the organization's members to put this magazine together, I hadn't gone out of my way to get involved on a local level.

The morning of the New Ballfield Construction Seminar, heavy, gray rain clouds threatened the sunny images that I had played out in my mind. I was really disappointed, and figured that the event would surely be postponed — after all, nature does have the final say in this industry. I was surprised to learn that the workshop would proceed, despite the weather.

The morning session opened with coffee and donuts, which won me over from the start. One thing I've noticed about these association types is that they know good food — that in itself is usually enough to get me involved.

Full and content, I settled in for the field construction presentations, which turned out to be quite interesting. The speakers stuck to the practical information. They didn't get up there and tell the attendees how to do their jobs, they simply shared their own experiences.

The atmosphere was casual and friendly, and the audience wasn't afraid to get involved by asking questions. It was becoming clear that this group was just a bunch of people who shared common problems in their work. They had decided to pool their resources and share their stories.

In fact, much of the learning took place outside of the "classroom" situation. Between presentations, attendees clustered in groups to continue the idea exchange. Everyone seemed to be taking full advantage of the opportunity to share in the diverse collection of expertise.

George Bannerman, owner of the equipment company that bears his name, ended the morning session with product demonstrations. This is another perk of membership in the STMA – they're a fairly well-connected organization.

Bannerman showed us his newest line of products and explained all of the innovations that are making life easier for sports turf managers. After lunch — which reinforced my faith in the association's good taste — Bannerman jumped on his tractor and zipped around the field in a series of hands-on product demonstrations. I think that by the end of it all, many of the attendees were calculating their budgets in their heads.

All and all, my field trip was a resounding success. It never did rain, and I left with a satisfied belly and a head full of new and useful information that will help me as I return to my desk and the magazine.

I urge you to check out these meetings if you haven't already. The STMA is a great group of people, and they're always looking for others who have experiences to share.

Steve Berens, Editor
(847) 427-3005

Tip o' the Month

Fair Lines

by Floyd Perry

If new labor- and cost-saving concepts can be incorporated into maintenance programs without sacrificing field safety and playability, the whole community wins. A little bit of innovative pre-construction planning can save years of post-construction labor and expense.

For instance, the clay areas of softball and baseball fields are generally marked daily, since games require lines to distinguish fair and foul areas of play. We've always referred to these lines as "foul lines," but we have to remember that if the ball hits the line, the base, or the pole, it's a fair ball. If we think in terms of "fair lines," it's an entirely different ballgame.

Fair lines run beneath the bases, since the whole base is considered fair territory. Some progressive

groundskeepers paint the clay surface to avoid clay build-up and smear marks after dragging.

Continued on pg. 15

CALENDAR OF EVENTS

October 1

Application deadline for UMass Winter School for Turf Managers, Mon.-Fri., Jan. 4 - Feb. 19. Contact Trudie Goodchild: (413) 545-2484, or Mary Owen: (508) 892-0382.

October 6

Winning Fields seminar, Doubleday Field, Cooperstown, NY. Contact NYSTA: (800) 873-8873, or (518) 783-1229.

October 25-28

The National Institute on Park and Grounds Management's 28th Annual Educational Conference, Riviera Hotel, Las Vegas, NV. Contact National Institute: (920) 733-2301.

November 1-5

North Carolina State University Supervisors' Management School, Wilson Lodge, Oglebay Park, Wheeling, WV. Contact Chip Futrell: (919) 513-1938.

November 4-6

ERNA's Expo Fall '98, Atlantic City Convention Center, Atlantic City, NJ. Contact ERNA: (800) 376-2463, or www.erna.org.

November 10-13

New York State Turfgrass Association's (NYSTA) Annual Turf and Grounds Exposition, OnCenter, Syracuse, NY. Contact NYSTA: (800) 873-8873, or (518) 783-1229.

November 14-17

The 9th Annual Green Industry Expo (GIE), Opryland Hotel Convention Center, Nashville, TN. Contact Eleanor Ellison: (770) 973-2019.

1999

January 13-17

Sports Turf Managers Association's (STMA) 10th Annual Conference & Exhibition, Mesa, AZ. Contact STMA: (800) 323-3875, or (712) 366-2669.

STMA MESSAGE

Sports Turf Managers Association

How Do You Spell Success - GREEN

Let's face it, in this business we're measured by how green we keep our turf. When we're complimented, people tell us how beautiful our facilities look. They're really telling us our grass is green and our flowers and trees are pretty.

Field playability isn't a factor to the casual observer. The majority of the general public falls into this category, and among them are many who have a hand in judging the success of our programs.

So here we are in September, and it's beginning to cool down in most areas of the country. It's cool-season turf time — a great time to turn to fertilization to help keep your turf green.

For years, research has shown fall fertilization to be a tremendous benefit to turf. It helps turf hold color into the winter, and provides energy reserves for an early-spring green-up.

I remember my days as a "turf technician" at Chemlawn, when the green grass on some lawns would pop up through the white snow. It was obvious that grass was not popping up on every lawn, but it was happening on all of the lawns that I'd fertilized with late-fall applications.

My experience might not pass for strict scientific research, but it sure made an impression on me, and it became a factor in my own turf maintenance programs. So as those leaves begin to fall, set up the late-season fertilization that will give your turf the carbohydrate reserves it needs for next year's growth spurt.

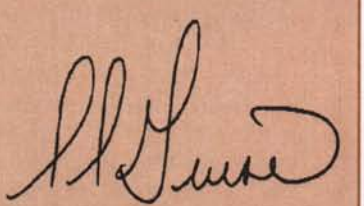
Please take the time to read about this year's High School Soccer Field of the Year. Sports Turf Manager Kurt Knuf acts as that facility's one-man shop. I think he should be wearing a shirt with one word stretched across the back in big letters — PRIDE.

It's obvious that Kurt has extreme pride in his work and his commitment to Flinn Memorial Stadium and Quincy High School. I'm proud of his accomplishments, and urge him to keep up the great work! Looking at his record, I'm sure Kurt will accept this advice — he took High School Football Field of the Year honors last year with this same field.

Kurt's positive attitude is as important as the well-planned and well-executed program that he has put in place at his facility. He wants as many young competitors as possible to have the experience of playing on a top-level surface.

While field users don't expect you to grow a golf green, they do expect your fields to look as good as one. If you have a field or two that meet this criteria, now is the time to enter photos in the Field of the Year awards program.

If you need information, just call STMA Headquarters: (800) 323-2875.



Stephen Guise, STMA President
(714) 704-0403

Surveying Basics

by Jim Puhalla

Sports field managers generally consider surveying to be something that's best left to specialists, but surveying is an important tool in our work. A basic knowledge of the tools and processes of surveying helps sports turf professionals make good decisions about field design performance, renovation, and even maintenance.

Field managers need to know how to use simple surveying equipment to perform such tasks as fixing wet spots, surface leveling, and installing drainage systems. To a degree, visual observations can help solve these problems, but it's a mistake to rely on your first look.

We recently visited a baseball diamond with a bad muddy area along the third-base line. After taking a look at the problem, the staff had scooped out a trench from the mud spot to the edge of the field.

Water *did* flow steadily through the trench, but unfortunately it flowed onto the field, not away from it. Because they didn't understand the field's contours, the staff actually dug a canal to conduct water *onto* the field. A simple knowledge of surveying would have prevented this mistake.

Every sports turf professional should have a basic knowledge of the tools and processes of surveying. *Courtesy: Jim Puhalla*

In fact, drainage problems on skinned areas are impossible to solve unless you understand field contours, and that requires a simple understanding of surveying principles. This holds true for installed drain systems, too. They work right only if they have a consistent downward slope. Simple surveying lets you solve problems like these without guesswork.

Practical considerations

When surface drainage problems occur, you can use surveying equipment to check the contours of the

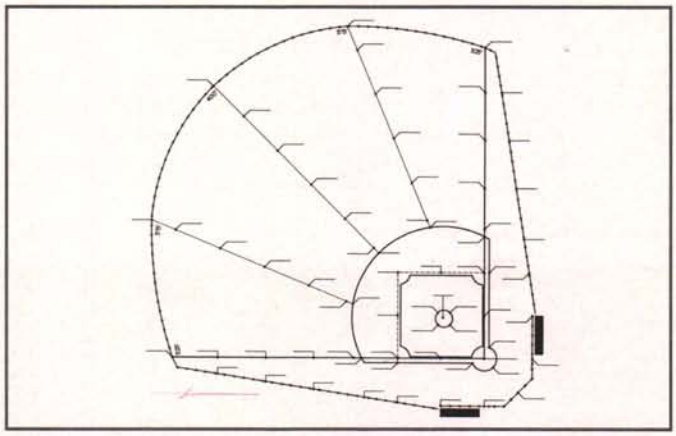
field. Take readings at several points around the wet area and in a larger ring around the first set of points. You may also need to survey part of an out-of-bounds area, since water sometimes flows onto the field from there.

When surveying an entire field, it's tempting to lay out a grid pattern (commonly on 50-ft. centers). This is a simple approach, but it doesn't work. The gridlines seldom fall at the actual points where elevation changes.

Instead, check center lines, end lines, side lines, and critical areas like the skinned area of a baseball diamond; grid patterns will miss these points. Out-of-bounds areas, fences, and other structures also need to be checked; grid patterns will miss these points, too.

Use a survey worksheet that shows the points at which you want to take readings (see **Figure 1**). Write existing elevations on top of each line, and if changes are to be made, write proposed elevations underneath.

Figure 1. Survey worksheet for a baseball diamond



Basic equipment

Basic sports field surveying equipment includes levels and transits. You'll also need an elevation rod for grades and a long tape measure.

Combined with an elevation rod, a level helps you measure differences in grades. A simple builder's level is least expensive. It costs about $250.00 to $500.00, including tripod and elevation rod.

Unless your level is perfectly calibrated, there's a good chance that when the scope is turned 180°, it will fall slightly out of level. It's best to place the instrument at a point on the field where a 90° turn of the scope is all that's needed to measure all elevations.

Figure 2. Builder's level

Automatic levels provide another good choice for surveying sports fields. This type of instrument automatically re-levels itself when it's turned to any angle. Automatic levels are more accurate than builder's levels, and they don't cost that much more (typically $500.00 to $1,500.00, with tripod and elevation rod).

Figure 3. Automatic level

Both the builder's level and the automatic level require two people to perform elevation readings. One person looks through the scope and one holds the rod. Laser levels, on the other hand, can be operated by a single user.

These instruments shoot an invisible beam at a rod with a level eye. When moving around the site, the level eye can be moved up or down the rod until an audible tone becomes constant.

There's also a more expensive laser level that can be digitally adjusted to a constant percentage of slope. These instruments are great for building fields or installing drain pipes that require a percentage of slope with no deviation in grade. Costs start at about $5,000.

Transit

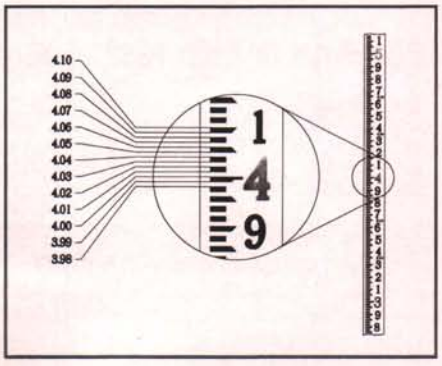
A transit sets straight lines, it sets precise angles for field boundaries, and it establishes precise slope, as for an installed drain system. Tape measures determine distances between field boundaries, the length of an installed drain line allows you to calculate the amount of fall in that distance, and so on.

A transit can also be used as a level if you can't afford an automatic level or laser level. However, transits are most commonly used to lay out fields, and are less valuable for use in diagnosing contour problems on existing fields.

Elevation rods

Elevation rods compare one elevation to another to help calculate the percentage of slope. Rods can be calibrated in either feet and inches or in feet and tenths. Using feet and tenths is easier, since it involves less calculation. With elevation rods

Figure 4. Elevation rod in feet and tenths



that use feet and inches, all readings have to be converted to feet and tenths to figure percentage slope.

Figure 4 illustrates a reading of a rod that's marked in feet and tenths. The right-hand column shows the rod's calibration, the center shows a magnified section of the rod, and the left-hand column shows how to read the rod in tenths and hundredths of a foot.

Figure 5 shows how inches compare to tenths of a foot. To convert inches into tenths, divide the number of inches by 12. To convert tenths into inches, multiply the number of tenths by 12. Although the result will be in inches, it will include decimal parts of an inch, rather than the more commonly used fractions such as 1/8 inch or 1/16 inch.

Figure 5. Comparing inches to tenths

Inches	Tenths
1	0.08
2	0.17
3	0.25
4	0.33
5	0.42
6	0.50
7	0.58
8	0.67
9	0.75
10	0.83
11	0.92

It's important to remember that rod readings are comparative values. One rod reading means nothing, but by comparing two or more readings, you can determine whether one point is higher than another.

The difference between two readings represents the amount of change in grade from one elevation to another. Remember, as the land goes down, the rod gets lower and the number gets higher. A lower reading means that the grade is higher, and vice versa.

Rod readings allow you to calculate spot elevations, which set specifications for field elevations in construction or reconstruction projects. Elevations often represent distance above sea-level. Like rod readings, elevations mean nothing unless they are compared to one another.

Spot elevations require much more mathematical computation than rod readings, which are literally read off the rod. Also unlike rod readings, lower numbers represent lower points on the field in elevation readings.

For sports fields, the most useful comparison between two elevations is the percent by which they differ. To derive this figure, take the difference between the two elevations and divide by the distance between them.

The percent slope for hard surfaces, such as skinned areas of baseball fields and clay tennis courts, should range between 0.25 percent and 1.0 percent. Grass areas should slope between 0.5 percent and 1.75 percent.

Performing a survey

When starting to survey a field, establish a benchmark so that all of your elevation measurements will be

Continued on pg. 14