Most of your clay surface sports, softball and baseball, youth or adult, have their specific field layout designs and distances readily available for you to follow (Diagram A). Place bases your respective league’s distances, e.g., Little League 60 ft., Pony 80 ft., high school 90 ft., etc. Pitching distances are in Diagram B.

If you’re laying a diamond out for the first time, it’s best to gather your engineering staff with distance lasers to set right angles and correct positioning of base anchors (Photo 1). Once all measurements are set and in place, it’s just a matter of stringing all distances from the apex of home plate, which is your benchmark for correct angles.

Photos 2 and 3 show the center string dissecting in half home plate and second base, with the two outside strings 12 in. off the center. These three strings square off the pitching rubber. Set the distance measurement according to league play (Photo 4).

The standard adult pitcher’s mound recommends a 3 x 5-ft. table or platform behind and including the pitching rubber (Photo 5), depending on level of performance and maintenance. Many times this table is smaller and rounder.

The corner bases are measured to the rear corner (Photo 6) with second base being measured 127 ft, 3 3/8 in. to the middle of the bag.

Many progressive groundskeepers can layout a baseball/softball diamond by different “homespun” means. Just remember all angles begin with the apex of home plate.

Floyd Perry is director of Grounds Maintenance Services, Orlando, FL, 407-648-1332.
bases
Rarely does anyone stop to think about the importance of a backstop structure on an athletic field. Quite often they are taken for granted and overlooked as simply being a part of the surrounding facility with no real impact on the game itself. But it is logical to believe that because of their importance to the game, backstop structures were invented within hours, if not minutes, of the first organized baseball game ever played. The time wasted running after every errant pitch and foul ball that passed the plate, not to mention the safety of curious bystanders and spectators made the use of these structures a necessity to facilitate a timely and enjoyable event.

Today backstops are as much a part of baseball and softball fields as the bases and home plate, but they are rapidly gaining popularity in other sports such as soccer, field hockey, and lacrosse as well. They come in many sizes, shapes, and styles to reflect the various needs of any particular game. Regardless of the sport however, their purpose is always the same—to protect people and property in the area behind the goal or home plate while improving the playability of the field by keeping the ball near the action.

A backstop is most effective when it is located relatively close to, but not infringing on, the field of play. For example, baseball and softball backstops must be located far enough back from the plate and base lines in case a reasonable play can be made on a ball in foul territory. If they are located too close to or overhanging the plate, they may interfere with a foul ball that would normally be playable.

In other field sports such as soccer, the backstop structure may be placed immediately behind the goal if desired since out-of-bounds territory does not affect play. Of course attention must be given to placing any support structure to minimize the danger of collision with a player running out-of-bounds. If the backstop is moved further from the field of play to avoid collisions, it must be made larger to compensate for the distance if it’s to remain effective. This trade-off between safety and playability controls the design and placement of the backstop structure.

Three baseball designs

There are basically three common backstop designs used for baseball and softball. The most popular is a three-sided chain link structure. Large diameter anchor poles support cross bars and chain link fabric to create a wall that runs behind the plate and some distance down each foul line. Sizes can vary from a simple set of three 10 x 10-ft. panels to a structure 30 ft. high and more than 100 ft. wide. Chain link backstops can also be made with a cantilevered or over-hanging section that projects up and out over the home plate area.

The second backstop style is the "clam shell." These are somewhat less common since they are made with shaped support frames and chain link fabric panels. Since only a few suppliers manufacture them, the cost of freight and installation to your location may be relatively high. Most fence contractors on the other hand, can build the three-panel structures on-site using standard fencing materials.

The third backstop design used for baseball and softball uses netting material instead of chain link fabric. Netting is less expensive, lighter weight, and more easily fit to odd shapes or forms than chain link, not to mention easier for spectators to see through. These structures are often made using support poles or cables, protective netting, and a solid base wall. Typically backstops of this nature are built into stadiums or enclosed facilities where spectator safety and visibility are important issues. Figure 1 shows an NCAA Division 1 women’s softball complex. This installation includes vertical nets hung behind home plate and down each foul line, along with an angled net running from the top edge of the backstop to the press box to protect the entire spectator seating area.

BY JIM MYRLAND

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The solid wall at the base of the backstop can be made from wood or concrete. The surface should be padded to not only protect players from collisions but also deaden the rebound of any ball that may impact the area. Padding can also be attached to a chain link structure in a similar manner to achieve the same results.

Hybrids of these designs in which both fencing and netting materials are used may
also be used to extend a standard chain link backstop. This allows for more complete coverage of large seating areas, concession stands, playgrounds, buildings, or parking lots immediately adjacent to a field. In many cases, with only minor additions to an existing support structure, the lower cost and lighter weight netting materials allow significant coverage at a more reasonable price.

Vertical netting panels can be permanently installed using either extensions to the main backstop anchor poles or additional support poles located adjacent to the backstop. Nets can also be cut to fit around a backstop over-hang (Figure 2), or a lightweight over-hang can be made using netting and cantilevered support poles (Figure 3).

Some net installations must be designed for convenient raising and lowering of the net much like the extra point nets behind a football goal post. When this is necessary, a flexible cable can be added to the top edge of the net panels and a pulley system arranged so that the net goes up and comes down in a controlled manner.

The major cost factor in a netting-based backstop extension is generally the additional support structure required. Wooden utility poles or heavy-welded steel poles may be necessary depending on the height and length of the installation. However, it may be possible to use an existing building or utility pole for support to minimize cost. If an existing structure is to be considered for this purpose, the manufacturer or contractor that installed it should be consulted to determine whether it could support the surprisingly large wind load produced by a netting material.

When designing a backstop structure for your facility, regardless of what sport it is for, keep in mind it is there to protect people and property while facilitating a more enjoyable game for both spectators and players.

Jim Myrland is manager of Beacon Ballfields, Middleton, WI.
COLD WATER PRESSURE WASHER

Tuff has a new line of heavy-duty, gas-powered, cold water pressure washers with seven models that deliver between 2,000 and 4,000 psi. All but one model of the DC line has a Honda engine; a 16-hp Vanguard engine drives the largest model, a DC-40H027. The DC series also features the industrial-grade Legacy high-pressure pump with a 5-yr. warranty and EZ start valve.

Tuff Pressure Washers/800-772-8833
For information, circle 180

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We've reduced our use of the hose sprayer; I don't miss dragging 300 ft. of hose around. —Stephen Cobbs, S & C Building Services, South Milwaukee, WI

ProLawn/800-292-3628
For information, circle 176

BATTING PRACTICE MAT

Colbond has manufactured various products for use in and on athletic fields for the past 30 years. Because of that success Colbond developed EnkamatPlus to protect natural turf fields in the most vulnerable areas—around the batting cage and fungo areas for baseball practices and sidelines during football and soccer games.

EnkamatPlus is a made of a 1/2-in. nylon matting that has been heat bonded to a strong polyester fabric. The matrix provides an airspace and a structure that flexes as coaches and athletes continually walk over the protected area. The polyester fabric provides a smooth walkable surface while allowing rainfall to penetrate through the structure to the turf below.

Colbond, Inc./828-665-5016
For information, circle 181
TAKE THE WRITING OFF THE WALL

Remove graffiti with RE-MUV, Revere's industrial strength graffiti remover. RE-MUV can be used to eliminate all types of vandalism, including paint and markers, from almost any non-porous surface. The formula is non-toxic and emits no fumes, meaning it can be safely used indoors. The gel formula clings to surfaces, dissolving marks in a few minutes.

Revere/800-321-1976
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**MAT DRAGS**

Beacon Ballfields now offers cocoa mat drags in two sizes. The 6-ft. wide by 4-ft. deep mat is available with or without the Beacon leveling bar. The company also offers a 6-ft. by 2 1/2-ft. deep hand cocoa mat drag. The 1-in. thick natural fiber cocoa mats have a vinyl backing. The lead edge is steel reinforced. Cocoa mats give your field that major league finish and are affordably priced for the budget conscious groundskeeper. Call Beacon for pricing and a catalog.

Beacon Ballfields/800-747-5985
For more information, circle 081

**NELSON'S GONE WIRELESS**

With the SoloRain family of wireless control equipment, Nelson provides battery-powered irrigation products delivering reliable control without conventional wiring. Nelson’s newest additions, the 8014 and 8014SR Duralife valve actuators, operate on a factory-installed battery for up to 10 years of normal use on a Nelson valve. In addition, the 8014 and 8014SR, like all SoloRain actuators, are completely waterproof. Ideal applications include hard-to-reach areas or other spots where it is not practical or economical to install a hard-wired controller. It is also suited to retrofitting manual systems or repairing existing wired systems.

L.R. Nelson Corp./888.NELSON.8
For information, circle 082

**TIRE REPAIR KIT**

Safety Seal has available an ATV tire repair kit that contains a metal T-handle insertion tool, six self-vulcanizing repairs, and instructions, in a storable clamshell package. Kit also available with CO2 inflator.

North Shore Labs/800-888-9021
For information, circle 178
GYM WALL PADS

Pioneer Manufacturing has a full line of gym wall pads, including permanent and removable pads. Pads are available in a variety of styles, sizes, and materials to fit any budget, and pads can be custom made to fit nearly any wall space. Also available is customized lettering and logos.

Pioneer Mfg/800-877-1500
For information, circle 179

BOOTS BOOTS BOOTS

West Coast Shoe Co. has a website, www.westcoastshoes.com, where turf managers and others can find information and purchase Wesco boots. Wesco manufactures stock and custom-made boots in a 155-step process; standard features on all boots include full grain leather, double vamps, leather insoles and midsoles, and slip-in cushion inserts.

West Coast Shoe/800-326-2711
For information, circle 187

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SPORTSTURF 35
The Airfield™ Sports Turf System is the first natural turf system to offer a drainage technology that doesn't rely on the French drain, developed in the times of the Roman Empire. Airfield™ suspends the entire playing surface over a one inch layer of air. Once the water has moved through the root-zone it drains away easily in the open air void.

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RE蒂NING WALL SYSTEM

Mill Ruins Park, an historical landmark that once was the largest direct-drive waterpowered facility in the world, now features a Weathered Versa-Lok retaining wall. In a continuing effort to reclaim land adjacent to the Mississippi River, the area has undergone reconstruction of canals, channels, and surrounding landscapes.

The first phase involved using segmental retaining walls to re-construct a tailrace that channels water from the river downstream alongside the partially excavated old flour mill ruins. The architects chose Versa Lok to complement historical surroundings while still ensuring long-lasting durability, it said.

Versa-Lok/800-770-4525
For information, circle 182

LET YOURSELF BE HEARD

The Hyper Sonic Sound beam is a sound reproduction system which allows you to remotely place sound wherever you want it, up to 300 ft. away by simply “sending” the sound waves through space. The sound only becomes apparent to the listener when the traveling sound waves have made impact with a surface, be it material, organic or human. For example, if the Sound Beam is used in a large exhibit space, and aimed in one particular direction, the visitors standing in that immediate area will notice the sound emanating from the surfaces which the HSS Sound Waves have impacted within that targeted area, while others located elsewhere in the space will not be disrupted by the otherwise fully radiating sound of a traditional loudspeaker.

The Sound Beam is a flat transducer system which can easily and unobtrusively be mounted on ceilings, walls or floors, secretly aimed to impact the surfaces where the sound is desirable, including people themselves.

International Robotics/212-982-8001
For information, circle 184
LET THERE BE LIGHT

The GE PowrSpot lumenaire comprises the core of GE sports lighting solutions for recreational and competition sports fields at all levels.

The PowrSpot optical assembly features a one-piece, symmetrically spun, parabolic aluminum reflector, coated inside and out with ALGLAS (potassium silicate glass finish chemically bonded to the aluminum surface). This protects against entry of gaseous and particulate pollution, promoting corrosion resistance, optical performance and lumen maintenance. Customers can choose either standard optics or ULC® (Ultimate Light Control) optics for installations requiring spill, light or uplight mitigation.

For information, circle 185

TURFCO

AMETEK NOW ARMOR

Ametek access boxes will now be known as Armor access boxes. The boxes are manufactured in five sizes that have numerous applications in turf irrigation and are available in green, black, gray, tan, red brick, and match brown. "Pop or drop-in" lids come blank or labeled "Control Valve," "Water Meter," "CAIV," "Sewer," or "Telephone."

The company’s full line of plastic valve boxes include round and rectangular boxes of various sizes and depths.

Plymouth Products/800-222-7558
For information, circle 177

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SPORTSTURF 37
PORTABLE GENERATORS
Coleman Powermate has a new line of Honda-powered portable generators available, ranging from 5,500 to 6,500 watts. All three new models have Honda GX overhead valve engines that shut down automatically if oil runs low; one model features electric start. Each model has tires, fold-down handles, and 5.6-gal. metal gas tanks. A special idle control reduces engine speed and noise when the electrical load subsides.
Coleman Powermate/800-445-1805
For information, circle 083

WALL PADDING
Promats Inc. has supplied protective padding for more than 250 stadiums across the country, including for every major professional outdoor sport. Its plywood-backed, "Z" clip attached pad is constructed with 3/4-in. APA BC or better exterior grade plywood, 3 in. of high-density polyurethane foam cores, and UV-resistant 16-oz. laminated vinyl covers. Normally meant for concrete or wood walls, can be used on chain link fences as well, says the company. Works when applying logos or advertising.
Promats Inc./800-678-6287
For information, circle 084

EARTH ANCHOR SYSTEM
A system you can install yourself anchors many parks and recreation amenities including benches, tables, playground equipment, and toilets. The AMU system consists of a Manta Ray earth anchor attached to a threaded rod; the anchor is first driven into the ground with a heavy hammer and re-usable drive steel to proper depth; then a locking socket and drill is used to pull the rod, toggling the anchor into a perpendicular position. A nut and washer complete the fastening.
Foresight Products/800-325-5360
For information, circle 087

CUSTOM SIGNS
Revere has more than 700 stock sign designs or will customize signs for you. Special safety notices, personalized parking, or directional signs are examples of what they do. Custom signs are available in a wide variety of sizes and materials. Signs are made of plastic, vinyl, or aluminum. Complete line of OSHA and traffic signs available.
Revere Products/800-321-1976
For information, circle 086
FRESH, FROZEN AND FAST

The new high capacity floor shake freezer, Model 0212, is designed for applications where serious volumes of thick, creamy shakes are required. The 0212 will handle high-demand rush hour requirements quietly and efficiently, says the manufacturer. This freezer also features the company’s patented automatic controls.

Stoelting/800-558-5807
For information, circle 183

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