

# Getting Ahead With Basepath Renovation

By Michael P. Matherne

**E**very aspect of maintenance, including basepath renovation, is "big" at Baseball City Sports Complex in Davenport, FL. The complex covers 43 acres, including the main ball field and 8,000-seat Baseball City Stadium, support facilities with a lighted, 2,500-seat practice field, four additional practice fields, a practice infield, two indoor batting/pitching facilities, 40 outdoor practice mounds, batting tunnels, support building, and surrounding parking areas.

Until 1990, Baseball City served not only as spring training headquarters for the Kansas City Royals, but also hosted more than 1,000 additional games per year. Field users varied from the Baseball City Royals-Class A and the Florida State League, to Florida High School Athletic Association State High School Tournament to the American Legion State Tournament.

The stadium's artificial turf infield was replaced with natural turf in the fall of 1991. The Tifway Bermuda 419, which now covers the entire grassed area of the infield, is overseeded in cool weather with perennial ryegrass.

## Timing Critical

The renovation procedures that follow in this article keep Baseball City in top shape. It's best to renovate basepaths each year, when the work can be completed with relative ease. If the task hasn't been tackled for several years, especially on heavily used fields, it can be an extensive undertaking. Whenever possible, plan the process for that time in the fall immediately following field use. If weather or schedules don't permit this, begin renovation during winter months or as early in the spring as the ground is workable so fields are ready for spring play.

When basepaths are not kept up to the level of the grass, rain or heavy irrigation can cause puddles that are difficult to clean up, interfere with play, and threaten player safety. Over time, the exposed surface is worn down, which leaves the grass by the infield and outfield higher than the center of the basepath and forms a "bowl" effect. Professional baseball players want the skinned areas of the field to be as perfectly level as possible so that the ball has a true bounce, whether it touches down on the grass or the clay.

The Baseball City fields, like all of Florida, are sand-based. This provides for excellent drainage — sometimes even too

Basepath cleared of existing brick dust and calcined clay, with boards in place. Photos courtesy: Michael Matherne.



New clay added and leveled after the existing clay has been roto-tilled.

much drainage. Basepaths must be monitored closely and water applied as necessary to keep them from drying out.

Skinned areas and basepaths in southern regions should have clay base a minimum of six inches deep. If this layer is too thin, it cracks under hot, dry conditions. In some northern regions, where the underlying soil has a high moisture content, it may be possible to "get by" with a four-inch clay base. Baseball City uses a mix of 80 percent red (Interlachen) clay and 20 percent sand as the base.

## Renovation Techniques

To begin the renovation process, remove any existing calcined clay and brick dust. Scrape off the material and store it on-site. It can be run through a screen to remove rocks, grass, and other debris, then added back into the mix when reworking the basepaths.

Next, remove any lips that have built up at the grass line. The best way to eliminate lips is not to let them happen. Sweeping clay from grass surface every game, and washing away accumulation during a break in the schedule will hold lip formation to a minimum.

With minor lip building, cut a trench at the edge of the grass line, then roll and tamp down. For more defined lips, cut along the edge of the turf with a sod cutter. Flip back the grass, remove the excess material, level the soil surface, and replace the grass.

Basepaths should be level. (Skinned areas should slope towards the outfields at the rate of one inch per 10 feet, to



allow for drainage.) To accomplish this, build a wooden frame similar to those used when pouring concrete. Stretch string lines from grass area to grass area, one-quarter-inch higher than the desired basepath level. This additional quarter inch provides the cushion that will be needed since, as the process of adding clay nears completion, it becomes almost impossible to get the surface level to the top of the board frame.

Run two-by-four boards down each side of the baseline at the correct elevation, level with the stretched string lines. To hold the boards in place, drive spikes through them and into the underlying field mix.

Within the framework of the boards, rototill the existing clay to a depth of 2 to 3 inches. Be careful not to hit the boards.

Do any mixing necessary to ensure that the clay or clay/sand mix that will be added to the basepath is uniform.

Monitor the moisture consistency of the new material. It should be wet, but not sticky. It must be moist enough to resist drying out, but not so wet that it sticks to equipment. The moisture content will vary with the properties of the clay and proportions of sand and clay in the mix used. Without the proper degree of moisture, the new material won't bond properly with the existing clay. It may take some trial-and-error work to get the ideal moisture content. When temperatures are high and drying winds prevail, keep a hose on-hand so additional water can be added throughout the renovation process to maintain the correct moisture content.

Add new clay to the basepaths within the board frame and rototill to a depth of 2 to 3 inches to bring the surface level with the two-by-four "forms." Make sure the new material bonds well with the existing clay. Run a board along the top of the boardforms to check the surface level.

After the basepaths have been leveled initially, they're ready to be rolled. Allow the top to dry out a bit so it won't stick to the roller. Baseball City uses a three-ton flat, self-propelled roller. If a roller isn't available, "tire roll" the surface. Drive a tractor back and forth, moving side to side, until the surface is rolled adequately.

The rolling process will compress the clay, forming a solid base. The mix used at Baseball City is compacted approximately one-half by rolling (meaning one inch of new clay packs down to one-half inch of added material). Compression rates generally vary with the mix used.

Spike the clay with a nail board. Then continue adding new clay, leveling it within the forms, rolling and spiking, until the clay is level with the form at one-quarter inch above the grass surface.

Remove the boards. Fill the long, narrow trench they leave with clay. Compact it to the same point as the clay added to the rest of the basepath.

Then spike and float the entire skinned area and basepaths. Spike and float boards have a nail drag on one side and are flat on the other. The flat side is used as a "float" to skim over the surface to level it off.

Add new calcined clay and/or brick dust.

If brick dust will be used, work it into the top three-eighths to one-half inch of clay by adding thin layers, then spiking and floating until the desired amount has been added.

Complete the renovation process by applying a top-dressing of approximately one-quarter inch of calcined clay. This creates a cushion that absorbs excess moisture and gradually releases the moisture as needed to the clay below. It also holds down dust when conditions are dry.

These final steps will have compressed that one-quarter inch "cushion" of clay mix so that the resulting basepath is level with the infield and outfield grass lines.

Monitor basepath conditions, making sure they don't dry out during the interim period before the daily maintenance schedule of the playing season begins. Providing daily attention to basepath maintenance, and renovating them when necessary will not only keep these crucial areas of your diamond in top shape, but it will help enhance player enjoyment, performance, and perhaps most importantly, safety. □

*Editor's note: Michael P. Matherne is head groundskeeper for Baseball City Sports Complex. He is a member of the national Sports Turf Managers Association.*



**(left)** Once the clay has been leveled, as shown here, the next step is rolling.



**(below)** Finish one section at a time until the entire skinned area has been renovated.